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Over 900 miles of railway has been equipped with automatic block signals during the past 12 months, in spite of the hard times, and probably 2,000 miles will be equipped during 1909; so that the setback due to the falling off in business will be disguised (in the mileage records) more effectually, perhaps, than in any other department of railway improvement. This is largely due, of course, to the fact that signal material has to be ordered a good length of time in advance. The 1908 construction was the finishing up of jobs which were begun in 1907. It is proper also to observe that much more than half of the new work was done by the Union and the Southern Pacific, whose records in this field have been phenomenal for several years. For this reason we speak of the setback as "disguised." As regards the railroads generally it is a real setback, whatever the totals for the country may show. Other interesting details of block signal progress are shown in the table printed on another page. Not the least of these is the addition of over 1,000 miles of the "telegraph block system" by two companies, the Chicago, Milwaukee & St. Paul and the Northern Pacific. This new mileage consists of lines which have only a moderate traffic, and 716 miles of it what may for the present be called very thin traffic; a fact which testifies to an appreciation, by the officers of these roads, of the space interval principle as a measure of safety, as distin-

guished from mere expediency, influenced, as expediency often is, by various unscientific notions and bolstered up by half-way measures. When 700 miles of new road in a thin country is worked by the space interval from the outset; and when the absolute block system is adopted, on single track, in such thoroughgoing fashion that the time-table is entirely done away with, as is the case on the western part of the Northern Pacific, there is ground for hope that the safety of travel on American railways generally will soon show actual and marked improvement.

The aggregate of the increases in our table, not counting items representing automatic signals substituted for manual, is 2,197 miles of road (by 20 companies); decreases on nine other roads* diminish this to 2,030.5 miles as shown in the table (60,709.2 miles now; 58,678.7 a year ago). The principal increases in the table are as follows:

	Miles of road—	
	Automatic.	Manual.
Boston & Maine.....	29	80
Chesapeake & Ohio.....	11	322
Chicago, Milwaukee & St. Paul.....	..	716
Chicago, Milwaukee & St. P. (new road).....	112*	44
Chicago, Rock Island & Pacific.....	44	18
Erle.....	16*	..
Illinois Central.....	100	..
Maine Central.....	27	..
Boston & Albany.....	..	141
Northern Pacific.....	..	57
Philadelphia & Reading.....	52	..
Southern Pacific, in Texas.....	193	..
Southern Pacific—Pacific system.....	43	..
Union Pacific.....	164	..
Oregon Short Line.....	122	..
Oregon R. R. & Navigation Co.....	..	..

*In place of manual.

On a few roads, as noted above, the aggregate length of line block signaled is less than one year ago. Some of these changes have not been explained; but in other cases the absence of a decrease raises a question; for it has been reported that the use of the telegraph block system had been abandoned on some sections because of slack business. We assume that in these cases business has revived and that the space interval rules have been re-established.

The highly important series of tests at the Watertown Arsenal of railway and structural material is in danger of interruption because of a lack of full knowledge by Congress of the work which is nearing completion, and whose results are of vital importance in securing better rails, joints and structural material. The annual appropriation of \$35,000 for this scientific work has already passed the House of Representatives and is to come before the Senate, with a proviso that the testing machine at Watertown Arsenal be moved immediately to Washington. It is the present delay in the work now being done which makes this clause objectionable. Time is the element of economy in finishing and reporting as soon as possible the elaborate tests of the strength of rail joints of the patterns now in service. This subject alone, important both for safety and saving money, should halt sudden and unnecessary removal of the plant from Watertown until the report of tests is available for railway officers. The immediate completion of the tests of riveted steel columns are of like importance. The microscopical and physical tests of steel ingots and blooms promises to give us precise knowledge of a subject in which there has been much misinformation and ignorance. These things the railways and the rail makers need to know from a source of unquestioned honesty of purpose and scientific ability, as an acceptable basis for agreement in the undertaking to secure safer and better railway material. The several committees of the American Railway Association, of the Society for Testing Materials, the Engineers of Maintenance of Way, and the Society of Civil Engineers need the results of the Watertown tests without unnecessary delay. Furthermore, the present law is sufficient. The Civil Service Act of May 27, 1908, gave full authority

*Rock Island, Cumberland Valley; Iowa Central; Hocking Valley; Mobile & Ohio; Lake Shore & M. S.; Norfolk & Western; Pere Marquette; Wabash.

to centralize the government experiment stations in these words:

The National Academy of Science is required, at their next meeting, to take into consideration the methods and expenses of conducting all surveys of a scientific character, and all chemical, testing and experimental laboratories, and to report to Congress as soon thereafter as may be practicable a plan for consolidating such surveys, chemical, testing and experimental laboratories so as to effectually prevent duplication of work and reduce expenditures without detriment to the public service.

This orderly transfer covers the ground. The present bill before the Senate is an interference with that orderly proceeding calculated to do harm.

RAILWAY BUILT IN 1908.

To those who have been at all in touch with the railway situation, it is not surprising that the record of new main track laid during the year just closing should show a substantial decrease; the surprising thing is the amount of mileage which was built.

In 1907, according to the best obtainable statistics gathered from all the railway companies in the United States, approximately 5,212 miles of new main track were laid, while a similar record for 1908 shows 3,214 miles, a decrease of 1,998 miles, or 38.3 per cent. The 1908 record is the smallest since 1904, when 3,832 miles were laid. The mileage built in 1904 showed a falling off of 1,820 miles, or 32.2 per cent., from 1903. It is rather interesting to note that for each fifth year since 1893 the mileage record has been a little over 3,000 miles. In 1894 there were 1,760 miles of new main track laid, a decrease of 1,264 miles, or 41.7 per cent. from the mileage built in 1893. This parallels closely the percentage of decrease this year. Not until 1898, when 3,265 miles were laid, did the record again reach that of 1893, showing a drag of five years following that panic.

As indicating sectional development, it is to be noted that only 761 miles were laid east of the Mississippi river in 1908, as compared with 1,884 miles in 1907, a decrease of about 59.6 per cent. West of the Mississippi, the decrease was only about 28.2 per cent., the 1908 record showing 2,455 miles and the 1907 record 3,420 miles. Montana, which was tenth in the list in 1907, with 191 miles, is first in 1908, with 537 miles. This total was built by three railways, the Great Northern building 161 miles, the Chicago, Milwaukee & St. Paul, on its Pacific Coast Extension, 354 miles, and the Northern Pacific, 21 miles. Our report of last year showed 143 miles on this same extension. Louisiana, which was first in 1907 with 384 miles, is in the ninth place this year with but 110 miles reported. The five leading states in 1908: Montana 537, Washington 369, California 314, Virginia 168 and Arkansas 176, are all in the western section with the exception of Virginia. The five leading states in 1907; Louisiana 384, Texas 339, South Dakota 337, Washington 324 and Florida 251 are similarly in the western section of the country with one exception, that of Florida. This indicates a continued prevailing increase in mileage for the western half of the country. Texas, which was second in 1907 with 339 miles, ranks fifth in 1908 with 165 miles, a decrease of 51.3 per cent.

The Pacific Coast Extension of the Chicago, Milwaukee & St. Paul, reaching west through Montana, Idaho and Washington, is listed in 1908 as having added 790 miles of new track; much the longest stretch built by any one company. The Southern Pacific added 448 miles, divided among the states of California, Oregon and Mexico. Of this, 364 miles were laid on the Mexican Pacific Coast and the Cananea, Yaqui River & Pacific. The Great Northern ranks third of the railway companies in number of miles laid, having 274 miles divided among the states of Minnesota, Montana and Canada. These three leading companies alone added 1,088 miles of the 2,455 miles placed west of the Mississippi river, or 55.6 per cent.

East of the Mississippi river, the Virginian Railway reported the largest new mileage, there being 131 miles in Virginia and West Virginia. The next greatest was the Carolina, Clinchfield & Ohio, with nearly 85 miles, divided among North Carolina, Tennessee and Virginia.

In Canada there was rather a substantial increase of 21.7 per cent., there being 1,248 miles in 1908 as against 976 miles in 1907. This mileage is divided among ten railway companies, the largest amount, 621 miles, being laid by the Grand Trunk Pacific and the second largest, 289 miles, by the Canadian Pacific. In Mexico there was an increase of 23.4 per cent., there being 435 miles in 1908 and 333 miles in 1907. Of the five companies building, the Southern Pacific, on its Mexican Pacific Coast, placed 238 miles in the states of Sinaloa and Jalisco and 102 miles in the state of Sonora.

This record covers 39 states and territories of the United States which reported mileage, and 11 which did not. Alaska, Arizona, Connecticut, Delaware, District of Columbia, Kansas, Maine, Maryland, Massachusetts, New Hampshire and Vermont did not report any new mileage in 1908, and of this number, Connecticut, Delaware, Massachusetts, New Hampshire and Vermont were similarly reported last year, as were Iowa and Rhode Island. There is included also 7 miles of new track built by the Panama Railroad on the Isthmus of Panama. No recognition has been taken of second, third or fourth tracks, sidings or electric lines.

The following table shows our figures for mileage built in the United States during the last sixteen years:

1893....3,024	1898....3,265	1903....5,652
1894....1,760	1899....4,569	1904....3,832
1895....1,428	1900....4,894	1905....4,388
1896....1,692	1901....5,368	1906....5,623
1897....2,109	1902....6,026	1907....5,212
		1908....3,214

CARS AND LOCOMOTIVES BUILT IN 1908.

To understand the condition of the car and locomotive building business fully during the past year, it is necessary to study both the number of orders placed for equipment during this period and also the number built. The orders placed, which are fully reported in another column of this issue, reflect both business conditions throughout the year 1908 and expectations of better conditions during 1909. The amount of equipment actually built during the year, on the other hand, shows only actual conditions unlightened by hope of the future, since actual recovery of business started too late in the year to show in the form of completed cars and locomotives. The following figures are also interesting in that they are compiled from returns from equipment building companies only, and do not include the output of railway companies' shops, the operation of which through the year has helped in giving somewhat of a market for labor and makers of railway supplies.

In 1907, car and locomotive builders worked at full capacity throughout the year on orders placed in the early part of that year. By the end of the year, however, the full effects of the depression were being felt, and comparatively few orders were carried over into 1908. Last December, officials of representative companies estimated that their orders on hand would keep them busy at full capacity for from two to four months only. Where possible, working time and forces were cut down so as to keep plants running on part time for as long a period as possible on completing such orders as could be delayed.

During the past year 35 car building companies in the United States and Canada built 78,271 cars, which is only 27 per cent. of the number built in 1907. These figures include subway and elevated cars, but not street railway and inter-urban cars. Of the cars built in the United States, 66,751 were freight cars for domestic service, 1,206 freight for export, 1,566 passenger cars for domestic service and 71 passenger for export. Canada built 8,593 freight cars for domestic service, 5 freight for export, and 79 passenger cars for domestic service. In 1907, Canada built 9,159 freight cars and 106 passenger cars.

The following table shows the cars built during the last 10 years:

Year.	Freight.	Passenger.	Total.
1899.....	119,886	1,305	121,191
1900.....	115,631	1,636	117,267
1901.....	136,950	2,055	139,005
1902.....	162,599	1,948	164,547
1903.....	153,195	2,007	155,202
1904.....	60,806	2,144	62,950
1905.....	165,465	2,551	*168,006
1906.....	240,503	3,167	*243,670
1907.....	284,188	5,457	*289,645
1908.....	76,555	1,716	*78,271

*Includes Canadian output.

Returns from 11 locomotive builders in the United States and Canada show a total of 2,342 engines, about the same relative falling off as in the cars built. Of the 2,124 built in the United States, 1,668 were for domestic use and 456 for export. These figures include 245 electric and 79 compound locomotives. The Canadian engines, 218, were all for domestic service. Of these 20 were compound.

Comparisons for the last 16 years are given in the following table:

Year.	No. built.	Year.	No. built.	Year.	No. built.	Year.	No. built.
1893....	2,011	1897....	1,251	1901....	3,384	1905....	*5,491
1894....	695	1898....	1,875	1902....	4,070	1906....	*6,952
1895....	1,101	1899....	2,475	1903....	5,152	1907....	*7,362
1896....	1,175	1900....	3,153	1904....	3,441	1908....	*2,342

*Includes Canadian output.

MOTIVE POWER AND ROLLING STOCK ORDERED IN 1908.

We began in 1901 to compile statistics of motive power and rolling stock ordered by steam railways during the year. The statistics gathered this year and presented elsewhere in this issue show that the orders placed during 1908 were smaller than in any year since our record has been kept. The smallest previous year was 1903; yet the aggregate orders placed in 1908 were only about 50 per cent. of those placed in 1903. The total orders for locomotives in 1908 were 1,182; for passenger cars, 1,319; and for freight cars, 62,669.

Although railways were sharply curtailing expenses throughout 1907, the orders for locomotives in that year were three and a half times as large as in 1908; for passenger cars 60 per cent. larger, and for freight cars almost three times as large. Going back as far as 1905, the number of locomotives ordered was six times as large as in 1908; the number of passenger cars, three times as large; and the number of freight cars, six times as large.

These figures show with painful clearness the injury the panic and the subsequent business depression have done both to the railways and to manufacturers of railway supplies. Greatly impairing the purchasing power of railways, they have gone far toward destroying temporarily the business of those from whom they buy. If the effects of this curtailment of railway purchasing power and reduction in orders for railway supplies could be traced out in their remotest ramifications, it would be found that they have hurt more or less every line of industry in the country.

There is no doubt, however, that "the corner has been turned." The railways, after being almost out of the market for over a year, are once more shopping. One of the largest railway equipment manufacturing concerns in the United States tells us that it has received more inquiries during the past few weeks than in any equal time for many months. How good a year 1909 will be for either railways or makers of equipment it would be futile to predict; but that it will be a good deal better year for them than 1908 cannot be doubted.

Despite the relatively small orders placed in 1908, they illustrate some tendencies that merit noting.

All steel cars for passenger equipment have passed the stage of experiment and they are now being confidently ordered in large numbers. The order of the Harriman lines for 200 steel passenger cars will furnish initial equipment of this kind for the Union Pacific and the Central Pacific as well as the Illinois Central. The Pennsylvania has had on many of its trains in regular main line service during the year the

steel coaches built last year, and it has placed orders for large additions to this class of equipment. It has also arranged to provide for solid steel trains, including Pullman sleepers, to be used in connection with its new passenger terminal in New York City. The Union Pacific experience with steel cars having semi-elliptical roofs has been so satisfactory that all the new steel equipment recently ordered will be built in that way. This road has become prominent as the builder of steel gasoline motor cars on a large scale, and two of the large shop buildings at Omaha are now busily employed in turning out McKen motor cars, not only for the Harriman Lines but foreign roads.

While steel coaches are being ordered by only a few roads, the use of steel underframes for baggage and mail cars has become more general. A notable example of this construction is found in the cars for the Frisco, built by the Pullman Company.

While a few large capacity steel freight cars have been built for special uses in and around steel works, the maximum capacity remains 50 tons, and this is not likely to be exceeded for some time to come. The 50-ton steel cars built for western lines are usually of the gondola type with drop bottom doors, as this form is available for lumber and other kinds of freight in addition to the usual lading of coal or ore.

The entrance of the Bettendorf Axle Company into the steel car building field was signalized by two novel designs exhibited at Atlantic City in June, one a gondola with single I-beam center sill and drop bottom doors, the other a steel box car containing a number of ingenious methods of construction. The solid rolled steel wheel for freight cars has become well established in the best practice and they are now used in such large numbers that three important works are making them. The United States Steel Corporation has taken over the property of the Schoen Steel Wheel Company and intends to enlarge it to meet increasing demands. The Standard Steel Company at Burnham has a large plant for this purpose and the Standard Steel Car Company at Butler, Pa., has recently commenced the manufacture of steel wheels in large numbers.

Roller side bearings and center plates have at last demonstrated their advantages for large capacity cars, and they are now used in increasing numbers. The development of these details is one of the most important matters connected with the satisfactory operation of this class of cars. The drop tests of friction draft gear have cleared the air to some extent on that vexed question, as they have demonstrated that an efficient buffer should absorb energy through its whole travel when delivered in the form of a blow as well as when applied by steady pressure. This difference in the action of friction draft gears of various types when tested under the drop has been a revelation to manufacturers and to railway officers alike. It must result in a prompt segregation into classes, representing those which are designed on correct principles and should survive and be further developed and those which, while they show a good diagram under pressure, become blocked and rigid under a blow and therefore cannot be of much use in absorbing buffing stresses in service.

While dull periods similar to the past year should allow more time for improvements in original design of locomotives, so few orders have been placed that little of such work has been revealed in actual construction. The Pacific type has become the established standard for heavy passenger service and most of the larger orders have been for this kind. These engines, as built for the trunk lines, have cylinders 23 x 28 inches with heating surface 4,000 sq. ft. and tractive effort of 35,000 pounds. While the average weight per driving axle has been as high as 57,800 pounds, there is little tendency to exceed 55,000 pounds in general practice. Probably the best solution of difficulties due to excessive wheel weights in the growth of the American locomotive to enormous proportions is the division into two units, as in the Mallet type, and the experience with these engines during the past year has been particularly instructive and satisfactory.

The "articulated compound locomotive" is the term which C. J. Mellin prefers to use in describing that type which has commonly become known in this country as the "Mallet compound." In his paper on this subject (*Railroad Age Gazette*, Dec. 11 and 18) Mr. Mellin explains in detail the methods of arriving at the proper points for the supports of the boiler and the effect of these supports on the distribution of the weight on the wheels. He arrives at the conclusion that on account of the location and mechanical construction of these supports the front engine becomes a very efficient leading truck for the rear engine, and that small truck wheels are unnecessary for slow speed freight locomotives. The two large locomotive builders, the American Locomotive Company and the Baldwin Locomotive Works, have shown in their practice thus far a difference of opinion in this respect. The Baltimore & Ohio articulated locomotives and those for the Central Railway of Brazil have for each engine six drivers and no truck. The Erie engines, the heaviest of this type built thus far, have for each engine four pairs of drivers and no trucks. These represent the practice of the American Locomotive Company. The Baldwin designs are represented by the articulated engines for the Great Northern and the Northern Pacific, where each unit has six drivers and a pony truck; also by the new engines for the Santa Fe, which are to have four pairs of drivers and a pony truck for each half of the locomotive. Referring to the truck in connection with articulated locomotives, Mr. Mellin says, "Nothing is to be gained by the use of this objectionable feature"; and he gives substantial reasons for the omission of trucks in all his designs for articulated freight engines.

The articulated principle is to be used for passenger locomotives, and two designs for this purpose have been worked out. One by the Baldwin Works, for the Santa Fe, has for each unit four drivers and a pony truck. This engine is to have an intermediate superheater taking exhaust steam from the high pressure cylinder. The American Locomotive Company's study of an articulated passenger locomotive shows the leading engine with a four-wheel truck and four drivers, and the rear engine with four drivers and a single pair of trailing wheels.

The advent of the articulated locomotive into general railway practice in this country opens up an interesting field for development, and the remarkable success attending the first ones that were constructed for special mountain service gives assurance that the type can easily be adapted to main line service, either passenger or freight, and that it will be preferred to the very large locomotives of ordinary types which have been constructed to meet the demand for engines of great power. Locomotives of the Mallet type have already been ordered for eight different railways in the United States.

The two large locomotive builders in this country are also divided in their ideas about the construction of superheaters. The Baldwin Works have apparently adopted the settled policy of using smoke box superheaters and low superheat. The American Locomotive Company prefers to use in its practice field tubes and a high degree of superheat. While the former practice effects some improvement, it does not exhaust the possibilities, and it is fortunate that the latter company is willing to exploit the high temperature superheater so that its advantages may be demonstrated. While the efforts in this direction have been discouraging to some extent, it has been largely due to carelessness and ignorance, and a principle which is correct must finally triumph over such defects. The Schmidt Superheater Company is establishing an agency in this country and it evidently sees some signs of promise for the introduction of its devices.

Some interesting developments are being made in improved valve gear for locomotives. The Young rotary valve and gear has been modified so as to use the Walschaerts form, and it is thought some improvement has been made in the link construction. This form of valve and gear is to be applied to new passenger locomotives for the Chicago & North Western and it is in use on the Lackawanna. The Pilliod valve gear,

which is being applied to new Alton passenger engines, resembles the Walschaerts in being an outside gear and in dispensing with eccentrics, but it also dispenses with the link and has no sliding motion; it is all pin connected. The peculiarity of this motion as distinguished from the Walschaerts is that it uses a small crank of only $6\frac{1}{2}$ inches diameter, on the main pin, instead of the 14 or 15 inches with the Walschaerts, and more of the motion for the valve stem is obtained from the crosshead.

In boiler construction the combustion chamber is growing in favor. In addition to those on the Northern Pacific, it has been introduced in boilers for the Lake Shore and for the decapods on the Buffalo, Rochester & Pittsburgh. It is also to be used in new engines for the St. Paul. There is some hesitation about the further use of fireboxes as wide as 65 to 75 inches for bituminous coal and there is a tendency to use more moderate widths, 50 to 56 inches. The short life of side sheets in wide fireboxes as compared with the longer life of those in the narrow O. G. shape has suggested the importance of the general principle that firebox sheets should incline out toward the top instead of in, as they do on many wide boxes. This reform will probably lead to a narrower grate and decided changes in the prevailing shape of large fireboxes.

The electrification of the St. Clair tunnel on the Grand Trunk has demonstrated the success of the single phase electric locomotive in the heaviest freight service thus far operated by electricity, and its adaptability to high speed passenger service is shown by its performance on the New Haven. The three phase system for electric locomotives is soon to be used by the Great Northern in its Cascade tunnel. The decision of the Pennsylvania to use direct current for the locomotives operating in its terminal lines connected with the New York station is an important event in the history of the application of electricity to steam lines in the United States.

RECEIVERSHIPS AND FORECLOSURE SALES IN 1908.

The mileage and capitalization of railways that went into the hands of receivers in 1908 were greater than in any year since the panic year of 1893. The total mileage of roads going into receiverships in 1908 was 8,009; their stock, \$325,350,000; their funded debt, \$271,009,000, and their total outstanding capitalization, \$596,359,000. In 1893 the mileage of roads going into receiverships was 29,340 and the capitalization \$1,781,046,000. That was the most disastrous year in the history of American railways. The next most disastrous year since 1876, when we began to keep this record, was 1884. In that year roads with an aggregate mileage of 11,038 miles, and an aggregate capitalization of \$714,755,000, became insolvent. The number of roads becoming insolvent in 1908, 24, is the largest since 1896; but, as the accompanying table of receiverships shows, this number has been exceeded in 12 years out of the past 33.

The foregoing figures do not include electric railways. If data regarding these lines were included the showing would be quite different. The inclusion only of the Interborough Metropolitan Company (New York) and the Chicago & Milwaukee Electric would increase the capitalization of failed lines by over \$225,000,000. In view of the rapid development of interurban electric railways it is probably that, in order to make a fair comparison with former years, failed lines of this kind should be included in our annual list of railway receiverships.

The heavy increase in the number and capitalization of failed roads in 1908 over 1907 is due to a combination of causes. During the period of general prosperity it was necessary for the railways of the United States largely to increase their investment and operating expenses to handle a fast growing traffic; the burden was made especially heavy by the high prices of material and high wages of labor. The wave of anti-

railway legislation in 1906 and 1907, a "tight" money market that made it hard to get capital on good terms for even the most legitimate enterprises, the panic in October, 1907, and the business depression that followed, greatly reduced the traffic and earnings of most roads without making possible corresponding curtailments of fixed charges and operating expenses. In view of these conditions, it is remarkable, not that the list of receiverships is long but that it is not longer. It is common knowledge among the well-informed that there was serious danger for quite a while that the list would be much longer. Every one knows the dramatic story of how E. H. Harriman intervened at the crucial moment and saved the Erie from going to the wall, while J. P. Morgan & Co. have been buying the company's coupons since last summer. The Erie is not the only large road whose fate at one time hung in the balance. There has been a good deal of loose denunciation of "community of interest" arrangements; but if the strong factors in the railway field, owing to arrangements such as these, had not had a common interest in standing together and holding up weak roads, the record of receiverships in 1908 would have been worse.

The following is the list of steam roads for which receivers were appointed in 1908:

Receiverships Established in 1908.

Railway.	Mileage.	Funded debt.	Stock.
Seaboard Air Line	2,611	\$64,185,000	\$62,516,000
Atlanta & Birmingham Air Line..	216	7,760,000	1,525,000
Chicago Great Western	818	.....	107,033,000
Detroit, Toledo & Ironton	438	18,920,000	25,000,000
Macon & Birmingham	105	500,000	500,000
Tallulah Falls	58	874,000	500,000
Chicago, Cincinnati & Louisville..	284	6,660,000	4,206,000
International & Great Northern...	1,106	25,253,000	9,755,000
Western Maryland	543	58,719,000	15,685,000
Cincinnati, Bluffton & Chicago ..	52	825,000	1,125,000
Bainbridge Northeastern	16*	.....	200,000
Raleigh & Western	8	108,000	128,000
Alaska Central	54	3,500,000	4,750,000
Oklahoma Central	132	1,800,000	10,000,000
Missouri River & Northwestern...	35	1,000,000	1,000,000
Wabash-Pittsburgh Terminal	63	30,236,000	10,000,000
Central Railway of Oregon	83	250,000	2,000,000
Wheeling & Lake Erie	442	15,000,000	36,980,000
West Side (Pittsburgh) Belt	22	383,000	1,080,000
Southern Indiana	237	10,537,000	11,000,000
Chicago Southern .....	..†	4,000,000	1,500,000
Newport & Wickford	4	72,000	100,000
Norfolk & Southern	580	17,267,000	17,267,000
Newton & Northwestern	102	2,460,000	2,500,000
Total	8,009	\$271,009,000	\$325,350,000

*Not in operation.

†Mileage included in that of Southern Indiana.

The foregoing list includes five of what are known as the "Gould lines"—the Western Maryland, the International & Great Northern, the Wabash-Pittsburgh Terminal, the West Side (Pittsburgh) Belt and the Wheeling & Lake Erie—having an aggregate mileage of 2,176 miles. That the Gould system of roads suffered worse than any other large system was largely due to the fact that the controlling interests used their available resources during prosperous times in building such new properties as the Western Pacific and the terminal lines at Pittsburgh, and the panic caught some of their old lines in weak physical and financial condition and some of the new properties without a self-supporting traffic.

T. J. Freeman was made receiver of the International & Great Northern on February 26. The failure of the road was attributed by the management to a heavy decline in earnings due to the business depression and to the policy of the Railroad Commission of Texas. The road had for four months suffered a decrease in gross earnings at the rate of \$3,000,000 a year when the Texas Commission ordered it to make additions and improvements that would involve the expenditure of many millions of dollars. The company defaulted in interest to the amount of \$494,620, and consented to the receivership that was then applied for by its creditors. If the company had not gone into insolvency when it did it would soon have been bankrupt if it had begun to try to carry out the orders of the Texas Commission. A receiver having been appointed by a federal court, the Commission was rendered impotent to enforce its orders.

The receivership of the Western Maryland was attributed by the company to the "commodities" section of the Hepburn act. B. F. Bush, president of the road, was made receiver on March 5. The company had outstanding \$3,776,750 notes due on April 1, secured by \$5,037,000 first mortgage bonds, and owed over \$300,000 for materials and supplies. During the six months ended December 31, 1907, both its gross and net revenues largely increased. It was not confronted with any failure of its revenues to cover fixed charges. But it had maturing obligations growing out of its temporary provisions for capital expenditures and it had at an early date to encounter the commodity clause of the Hepburn act. To obey this law would involve the sale of its large coal properties at heavy loss. Not to obey it might bring down on it enormous penalties. On the whole, it was thought best to put the road under the protecting care of a federal court and that could authoritatively tell its management what course it safely could take.

Francis H. Skelding and Henry W. McMaster were appointed receivers of the Wabash-Pittsburgh Terminal on May 29. The Wabash-Pittsburgh Terminal was built under well known circumstances that made it costly to construct and hard to get ample traffic for. The panic and business depression following reduced the freight traffic in and out of Pittsburgh more than anywhere else. The Wabash-Pittsburgh Terminal, being entirely dependent on this traffic and being also a new property, was peculiarly hard hit. The Wabash owned all the Terminal's \$10,000,000 stock and had also advanced it large sums. It did not feel justified, under the financial and industrial conditions existing, in making more advances. The receivers were appointed on the petition of the Wabash, which stated that the Terminal was insolvent, had defaulted in the payment of principal and interest of a \$300,000, 7 per cent. note to the Wabash and could not meet the interest due June 1, 1908, on \$30,000,000 first mortgage 4s.

The appointment of a receiver for the Wheeling & Lake Erie followed and was due to the receivership of the Wabash-Pittsburgh Terminal, which held a large majority of the stock of the Wheeling & Lake Erie. In 1905 the latter road authorized an issue of \$35,000,000 4 per cent. gold bonds to refund the existing bonded debt (\$15,000,000) and finance requirements for improvements and additions. The management could not float these bonds, but pledged \$12,000,000 of them to secure an issue of \$8,000,000 notes guaranteed by the Wabash and maturing in August, 1908. Business in the fiscal year ended June 30, 1907, was the best in the road's history, and in the first months of the next fiscal year earnings were \$18,500 a month and promised to provide a surplus of \$750,000 for the year. The panic, however, suddenly reduced the road's business 50 per cent., and it became evident that it could not meet its engagements without further aid from the Wabash, which might in turn have embarrassed that road to which it was already a large debtor. Therefore an overdue claim of \$87,910 by the National Car Wheel Company was not paid and on the application of this concern, B. A. Worthington, vice-president and general manager of both the Pittsburgh Terminal and the Wheeling & Lake Erie, was made receiver.

This was soon followed by the appointment of the receivers of the Wabash-Pittsburgh Terminal as receivers of the West Side (Pittsburgh) Belt. The Terminal company owned almost all of the stock of the belt line and its insolvency was due to the same causes that pulled down the parent company.

Since the receiverships of the Gould properties in and about Pittsburgh were created important improvements have been begun. The court authorized the issue of receiver's certificates, amounting to \$947,000 to buy equipment, reline tunnels, etc., for the Wabash-Pittsburgh Terminal and over \$700,000 was authorized to be raised in the same way for similar improvements in the Belt Line, it being believed these expenditures were necessary to subserve the interests of both the creditors and owners of the properties.

The receivers of the Seaboard Air Line, the largest property to go into receivership during the year, were appointed on January 2 on the application of the company itself. The company had outstanding about \$1,000,000 in past due vouchers and a floating debt of about \$3,000,000. It was being pressed by its creditors and the condition of the money market, together with the reduction of earnings due to the panic, made necessary a readjustment of its securities that would give them the stability and value to which the earnings and outlook of the property entitled them. Two factions had been struggling for control. R. Lancaster Williams, brother of John Skelton Williams, former president and leader of the minority faction, was appointed one receiver, and S. Davies Warfield, representing the Ryan-Blair, or majority faction, was appointed the other receiver. Later a third receiver, Edward Carlton Duncan, was named especially to represent the court. John Skelton Williams estimated that under favorable conditions annual net earnings should be \$5,700,000, or \$2,000,000 over fixed charges; and there is no reason to doubt that the road will come through the receivership in good shape. The Atlanta & Birmingham Air Line was affiliated with the Seaboard Air Line and went into insolvency with it.

The receivership of the Chicago Great Western, which was created on January 8, was caused by a combination of untoward circumstances. It used to be said that A. B. Stickney had so financed the property that it was insolvency-proof. He managed to keep it free from bonded indebtedness. Short time notes were its undoing. On June 30, 1907, \$8,491,848 in short time notes were outstanding, of which \$3,342,545 came due in 1908 and \$4,069,061 in 1909. The total amount of short time notes at the time of the receivership was about \$10,000,000. A strike of boilermakers in the road's shops, that seriously interfered with operation, and, in addition, the panic of 1907, severely reduced its earnings; and the financial stringency prevented it from getting extensions of its notes. Before the receivers were named a judgment of \$70,000 had been secured against the company and \$545,000 in notes had gone to protest. A. B. Stickney, president of the road, and Charles H. F. Smith were appointed receivers. The Great Western's controlled companies, the Wisconsin, Minnesota & Pacific and the Mason City & Fort Dodge, were not involved.

The business depression was the main and direct cause of the receivership of the Chicago, Cincinnati & Louisville. It has mortgage liens aggregating \$7,000,000 and a floating debt of \$1,750,000. Following the panic its business fell so badly that it could not settle with connecting lines for interchange of cars. Its connections then refused to give it business, which so aggravated conditions that its gross earnings fell from \$116,000 in October, 1907, to \$64,000 in January, 1908. It became unable to pay its floating debt or interest on its bonds and a receivership was asked for by both the management and creditors upon the ground that the road was in danger of having judgments and executions against it that would deprive it of power to perform its functions as a common carrier. James P. Goodrich was appointed receiver on February 13.

George K. Lowell, vice-president of the Detroit, Toledo & Ironton, and B. S. Warren, general counsel, were appointed receivers of this property on February 1 on application of the Knickerbocker Trust Company, as trustee. The road defaulted on that date on the interest on the consolidated mortgage 4½ per cent. bonds, dated 1905 and due August 1, 1980. The directors stated that the failure of the company "could be directly attributed to adverse railway legislation, particularly to such as in effect prohibits any railway from having any interest in any coal property in excess of a production equal to its own requirements." The legislation referred to prevented the company from benefiting by important coal lands it had acquired in Northern Kentucky, and business depression cut down its revenues from other sources below what was necessary to meet fixed charges.

The failure of the Southern Indiana and its subsidiary, the

Chicago Southern, was connected as much with the insolvency of the Chicago banks of their controlling factor, John R. Walsh, as with general business conditions.

The number, mileage and capitalization of the railways that have failed since we began to keep this record, 33 years ago, are as follows:

Summary of Receiverships for 33 Years.

Year.	Number of roads.	Miles.	Bonds and stocks.
1876.....	42	6,662	\$467,000,000
1877.....	38	3,637	220,294,000
1878.....	27	2,320	92,385,000
1879.....	12	1,102	39,367,000
1880.....	13	885	140,265,000
1881.....	5	110	3,742,000
1882.....	12	912	39,074,000
1883.....	11	1,990	108,470,000
1884.....	37	11,038	714,755,000
1885.....	44	8,836	385,460,000
1886.....	13	1,799	70,346,000
1887.....	9	1,046	90,318,000
1888.....	22	3,270	186,814,000
1889.....	22	3,803	99,664,000
1890.....	26	2,963	105,007,000
1891.....	26	2,159	84,479,000
1892.....	36	10,508	357,692,000
1893.....	74	29,340	1,781,046,000
1894.....	38	7,025	395,791,000
1895.....	31	4,089	369,075,000
1896.....	34	5,441	275,597,000
1897.....	18	1,537	92,909,000
1898.....	18	2,069	138,701,000
1899.....	10	1,019	52,285,000
1900.....	16	1,165	78,234,000
1901.....	4	73	1,627,000
1902.....	5	278	5,835,000
1903.....	9	229	18,823,000
1904.....	8	744	36,069,000
1905.....	10	3,593	176,321,000
1906.....	6	204	55,042,000
1907.....	7	317	13,585,000
1908.....	24	8,009	596,359,000
Total in 33 yrs	706	127,639	\$7,292,431,000

Only three steam roads seem to have gone through foreclosure sales during the year. These were the following:

Roads.	Mileage.	Funded Debt.	Stock.
Texas Southern.....	75	\$807,000	\$80,000
Ione & Eastern.....	13	360,000	1,000,000
Phillips & Rangeley.	50	200,000	100,000
	138	\$1,367,000	\$1,180,000

The Southern Texas was ordered sold on May 5 at foreclosure sale for an upset price of \$375,000. The sale was postponed to July 7, and then to August 4, the upset price being reduced to \$225,000. On the latter date it was bought by the Union Trust Company of St. Louis for \$286,000. Its name has been changed to the "Marshall & East Texas." The Ione & Eastern was sold for \$225,000 to F. J. Solinsky, who, it is said, represented Peterson & Erickson, the contractors who built the line. The Phillips & Rangeley is a narrow gage line from Phillips, Me., to Rangeley.

The number of foreclosure sales probably would have been larger but for depressed business conditions that made it unusually hard to find buyers for bankrupt properties. The Missouri River & Northwestern (mileage 34 miles; bonds, \$1,000,000; stock, \$1,000,000; receivership indebtedness, about \$275,000), was advertised to be sold last June, but no sale took place. The Rapid City & Wyoming Railway Company was organized under the laws of South Dakota to take over the property, but this plan has fallen through, and the road is now advertised to be sold on January 12, 1909, at an upset price of \$75,000. It is expected the bondholders will bid it in. The Pontiac, Oxford & Northern (mileage, 100 miles; bonded debt, \$400,000; stock, \$1,000,000) was advertised to be sold three times during the year at an upset price of \$700,000, and later at \$400,000, the buyer to assume responsibility for the bonds. Suit was begun for the foreclosure of the San Diego, Cuyamaca & Eastern (mileage, 25 miles; funded debt, \$550,000; capital stock, \$769,000).

The following is the record of foreclosure sales for 33 years:

Summary of Foreclosure Sales in 33 Years.

Year.	Number of roads.	Miles.	Bonds and stocks.
1876.....	30	3,840	\$217,848,000
1877.....	54	3,875	198,984,000
1878.....	48	3,906	311,631,000
1879.....	65	4,909	243,288,000
1880.....	31	3,775	263,882,000
1881.....	29	2,617	137,923,000

Year.	Number of roads.	Miles.	Bonds and stocks.
1882.....	16	867	65,426,000
1883.....	18	1,354	47,100,000
1884.....	15	710	23,504,000
1885.....	22	3,156	278,394,000
1886.....	45	7,687	374,109,000
1887.....	31	5,478	328,181,000
1888.....	19	1,596	64,555,000
1889.....	25	2,930	137,815,000
1890.....	29	3,825	182,495,000
1891.....	21	3,223	169,069,000
1892.....	28	1,922	95,898,000
1893.....	25	1,613	79,924,000
1894.....	42	5,643	318,999,000
1895.....	52	12,831	761,791,000
1896.....	58	13,730	1,150,377,000
1897.....	42	6,675	517,680,000
1898.....	47	6,054	252,910,000
1899.....	32	4,294	267,534,000
1900.....	24	3,477	190,374,000
1901.....	17	1,139	85,808,000
1902.....	20	693	39,788,000
1903.....	13	555	15,885,000
1904.....	13	524	28,266,000
1905.....	6	679	20,307,000
1906.....	8	262	10,400,000
1907.....	6	114	13,777,000
1908.....	3	138	1,547,000
Totals in 33 yrs.	934	114,091	\$6,895,469,000

REVIEW OF 1908.

With the exception of the news pages, substantially the whole of this week's issue is given up to careful reviews of the fiscal year 1908 from a railway standpoint. These reviews include classified lists of new construction, equipment orders, corporate changes, receiverships and foreclosure sales and many other detailed statements, with the intention of giving a full and accurate picture of the year 1908 from a railway standpoint, as compared with other years. Each of these special studies brings out with considerable exactness its own branch of the subject. The intention in this survey is rather to draw from this collection of statistics some of the conclusions and inferences which the statistics suggest. It must be observed at the outset that these statistics cover two different periods. The general statistics, including the statement of new mileage, of equipment orders, of receiverships and foreclosures, etc., cover the calendar year 1908. On the other hand, the analysis of annual report returns by graphic diagrams is based on the June 30 year, and is statistically defective because it is a composite of some five months of very dense traffic with the seven lean months which succeeded them, so that the results are partly obliterated.

The year 1908 is distinguished by three conspicuous features. It was an after-panic year; it was the first year in which the mass of experimental and hostile legislation, both state and national, passed prior to the panic, really had a chance to work; and it was a year marked by the extraordinary spectacle of a new race to the Pacific coast, participated in by the Chicago, Milwaukee & St. Paul, the Gould lines, the Grand Trunk Pacific, the Canadian Northern and the Kansas City, Mexico & Orient, with a sixth company—the Denver, North-Western & Pacific—carrying on an independent project with the avowed intention of going on to the coast as soon as possible.

This eagerness to establish new connections with the great Pacific territory—connections reaching the coast at intervals all the way from the Canadian Northwest to the mouth of the Gulf of California in Mexico—really constitutes a further characteristic and successive epoch in American railway development. In the years immediately prior to 1893 this development was marked by the general aggressiveness in building into new territory in many different sections of the country. Much of this new construction was far ahead of actual necessities at that time, and proved a heavy drain on the parent companies in 1903 in the lean years which followed. Then came an era of consolidation and readjustment, and this naturally developed the next period, which was concerned primarily in making good railways out of bad ones, by means of extensive betterment work, which took out grades and curves, relaid light rail with heavy, built additional

second track and sidings, provided new equipment, and installed signals and other safety appliances. Before this betterment period had worked out the immediate aims which the larger companies had in view, but while the work was well in hand, the importance and profitableness of extending to the Pacific coast occurred to a number of strong companies at about the same time, and the present western development followed.

For the strongly financed projects, the hard times helped rather than hindered this work. In 1906 and the first part of 1907 labor was scarce, costly and very inefficient, and materials of all sorts commanded high prices. It has been estimated that the actual economy of the hard-times year has amounted to upwards of 25 per cent. on new construction work for which cash was already at hand, and some companies, notably the Chicago, Milwaukee & St. Paul, profited greatly by this circumstance, and pushed their work with the greatest possible expedition. The St. Paul coast extension is now nearly completed; the Western Pacific is not far behind it, and the Grand Trunk Pacific has made rapid progress, although its task is very much the greatest of all the roads now engaged in Pacific extension work and it has several years of work ahead of it. The Kansas City, Mexico & Orient and the Denver, Northwestern & Pacific have been less fortunate in their command of resources but have nevertheless made fairly good progress during the year.

As a result of this activity, Montana leads all the states in new construction work for 1908, with Washington second and California third. Louisiana and Texas, which built 724 miles in the aggregate in 1907, built only 260 miles in 1908; a fact which is causing reflection in their legislative halls!

No better off-hand measure could be given of the comparative stability of the American railway system in the panic of 1907 as compared with the panic of 1893, than the relative immunity from receiverships in the latter period. The drop in gross earnings from 1893 to 1894 on all the railways of the United States was a little over 11 per cent., and 24,340 miles went into receivers' hands on account of it—almost 17 per cent. of the mileage of the country. It is too early yet to estimate the total drop in gross earnings from 1907 to 1908, but preliminary returns indicate that it will not be different from the drop in 1893-4, while for several months last spring it went far beyond it. Yet, thus far, only 8,000 miles of road, or about 3½ per cent. of the entire mileage of the country has gone into receivers' hands, and there are strong indications that the worst is over, and that most of the companies that have survived thus far are safe for the present. It is true that the Erie has been taken care of by its friends for a number of months, and has been kept from receivership only in this way. But it is showing rapid improvement in its earnings, both gross and net, and is probably almost able to take care of itself again. One or two other large properties which were supposed to be on the verge of serious difficulties a year ago have shown such conspicuous success in reducing operating costs that they have given a very good account of themselves in a trying year.

The great reductions in operating costs have been the peculiarly interesting feature of the operations of the roads in the after-panic year. It may frankly be assumed that the greater part of this reduction was caused by discontinuing nearly all betterment work except strict necessities, and by cutting down the service to the lowest possible degree. A careful study of the year's annual reports, however, makes it apparent that the railway system of the country as a whole has been well maintained, and the general discontinuance of extraordinary improvement work has had no particular effect in the competitive situation, because it was shared by all alike.

The replies to our inquiry about the work of the state commissions, published in another column, are of great interest. A surprisingly large majority of the railway officers who an-

swered the query believe that the commissions are trying to be fair and are going to have a wholesome effect in their function of a safety valve to prevent explosions. Several officers feel bitter about the politics which constantly crop up in commission workings, and the inexperience of the appointees, as shown in their extraordinary requirements. We are inclined to think that most of the readers of these replies will sympathize with the vice-president who says he could write a book about the Texas commission! Yet we have always maintained that the commissioners would grow conservative with service, and that they would be less disposed to exact harsh and unreasonable things from railway officers after they had been given a chance to observe how hard these officers were working to give good and efficient service. As we predicted a year ago, much of the direct hostile legislation of the last two or three years has already been found unconstitutional, notably that preventing interstate railways from carrying appeals beyond the state courts in certain cases. The indications are strong that the pendulum is beginning to swing back again from the high point of hostility towards corporations, and we believe, on the whole, that the presence of strong state commissions is going to do good rather than harm.

The activity of the Interstate Commission which has perhaps occasioned the greatest expense and dissatisfaction this year, has been the application of Professor Adams' accounting requirements, with particular reference to the depreciation charge. Several important companies, conspicuous among them being the Hariman lines, have refused flatly to apply depreciation according to the commission's theory, on the ground that it is bad accounting, bad operating practice and means nothing; and the results from the companies which have applied the charge strongly bear out this contention. The greatest confusion exists in the manner of making the charge, some companies having offset it with a revaluation of their equipment, and others having made an arbitrary charge not at all comparable to the amount of their equipment, as measured by that of other companies. The new forms prescribed in making annual reports have also occasioned great trouble and expense. So far as these tend to uniformity they have some merit, but the conclusion cannot be avoided that the railway system of the country, as a whole, was keeping as good and as honest account before the commission interfered as it is now, and the good results from the enormous amount of trouble and cost arising out of the interference are not particularly prominent. The work of the commission as a whole, however, has been marked by a conspicuous effort at fairness and conservatism.

Space forbids anything except the merest mention of the earnest efforts which have been made this year to obtain better rails and better car wheels. The contest for supremacy between traffic on the one hand and equipment and roadbed on the other, suggests the contest between projectile and armor plate, in naval warfare. The freight trains of the last three or four years have been a little too heavy for the rails and the car wheels, but this difficulty now seems in a fair way of solution. The respite period of a dull year has given opportunity to look into these things, and to make critical test of operating theories and devices that had comparatively little chance to demonstrate their economies during the traffic rush of 1905, 1906 and 1907, and it seems clear that railway science as a whole is going to profit by the breathing spell.

The railway ticket tax in the German Empire, which was expected to yield very much more, returned about 19,000,000 marks in the fiscal year 1907, and about at the same rate so far this year and has dislocated traffic by diverting travel from the higher to the lower classes. Acknowledging its ineffectiveness the government now proposes to abolish it after March, 1910.

Contributed Papers.

BRITISH RAILROADS IN 1907.

The railroads of Great Britain and Ireland show for the calendar year 1907 as compared with 1906, an increase of something more than \$21,130,000* in gross receipts, but nearly 90 per cent. of this increase went to meet increased operating expenses, the increase in net receipts being less than \$2,500,000. The total amount of paid-up capital (including \$979,390,000 of nominal additions) increased by \$38,730,000 (including \$2,960,000 of nominal additions) to \$6,470,330,000, and the percentage of net earnings to total paid-up capital rose slightly from 3.45 in 1906 to 3.47 in 1907. Authorized capital increased by about \$48,750,000, which is larger than the corresponding increases in 1905 and 1906, though very much smaller than those which took place in other recent years.

Both passenger and freight receipts were greater in 1907 than in 1906, passenger by over \$5,000,000 (2.2 per cent.) and freight \$14,000,000, or 4.8 per cent., neither greatly different from the preceding year. The average receipt per passenger in the first class advanced from 46.2 cts. to 48.4 cts. Second-class ordinary receipts show declines; but whereas the decrease in receipts was 3.9 per cent., that in passengers was 13.8 per cent. Just as in 1906 compared with 1905, the receipts from third-class ordinary passengers advanced by nearly a million pounds, but while in the previous year the increase in numbers reached over 52 millions, for 1907 the numbers were only 27 millions greater. The average fare per third-class passenger was 12.8 cents as against 12.6 cents. Some companies carried a greater and others a smaller number of third-class ordinary passengers in 1907 than in 1906, and the increase in the total number of third-class ordinary passengers appears to be mainly attributable to the passengers carried by two underground lines in London, one of which was opened in 1907, and the other near the close of 1906. The average fare per passenger for all classes was 14.4 cents, which is practically the same as the average in 1906.

The freight statistics, as usual, omit the most interesting figures. The returns give 407.6 million tons of minerals carried in 1907, an increase of 24.6 million tons, or 6.4 per cent., and the amount of general merchandise conveyed as 108.3 million tons, an increase of 2.5 million tons, or 2.4 per cent. These increases in tonnage are approximately the same as those shown for 1906. But there is nothing to show how many different times a given ton is reported (by different companies engaged in through traffic). Receipts from minerals were \$147,075,000, an improvement of \$9,090,000, or 6.6 per cent. General merchandise receipts were \$4,480,000, or 3 per cent. higher at \$151,435,000, and live-stock receipts were \$475,000 (or 6.8 per cent.) better than the previous year, the receipts in 1907 being \$7,505,000.

Operating expenses increased by \$19,135,000—the largest increase since that of 1900, which amounted to \$23,265,000, and the proportion of operating expenses to gross receipts rose, accordingly, from 62 per cent. in 1906 to 63 per cent. in 1907. The proportion had been 62 per cent. for the four years preceding 1906, and in 1900, having in the latter year advanced from 59 to 62 per cent. Expenditure on maintenance of way increased by \$1,400,000, as against \$2,000,000 in 1906. That on locomotive power increased by \$10,950,000, as compared with an increase of \$4,400,000 in 1906; the large increase under this head being chiefly due to the high price of coal. Repairs and renewals of carriages and wagons and expenses for conducting transportation increased by \$850,000 and \$3,850,000 respectively. In taxes, however, the increases, which had been diminishing since 1903, gave place in 1907 to a satisfactory decrease of \$510,000.

* Five dollars for one pound sterling.

CHANGES OF RAILWAY OWNERSHIP OR CONTROL IN 1908.

The following list summarizes the principal changes in ownership or control of steam railways during 1908. There were a good many rumored changes that are not mentioned here. It was reported, for example, after E. H. Harriman came forward and saved the Erie from impending insolvency that he had got control of that road. There have been various reports about changes of control of some of the Gould properties, including the Wabash-Pittsburgh Terminal and the Western Maryland. Another report was that James J. Hill had got the Missouri, Kansas & Texas for the Chicago, Burlington & Quincy. Still another was that the Frisco had passed from the hands of the Rock Island interests to those of the Union Pacific. What foundation there is for these and various similar rumors cannot now be stated.

New Orleans, Mobile & Chicago.—Organized under the laws of Mississippi in June, 1908, to take over, in accordance with the plan for reorganization without foreclosure, the Mobile, Jackson & Kansas City, 199 miles, and the Gulf & Chicago, 203 miles, and to build an extension to New Orleans. Stockholders of the various companies voted in the late summer to authorize the consolidation and it was effected, with the consent of the Mississippi Railroad Commission.

Toledo Terminal R. R.—Organized under the laws of Ohio, with \$6,000,000 capital stock and an equal amount of bonds, to take over the Toledo Railway & Terminal Co., 57 miles. Of the bonds, \$4,000,000 were to be issued at once and \$2,000,000 to be held for future improvements. Twenty per cent. of the bonds were guaranteed by the Pere Marquette, 20 per cent. by the Cincinnati, Hamilton & Dayton, and 12 per cent. each by the Lake Shore & Michigan Southern, the Michigan Central, the Grand Trunk Western, the Pennsylvania Company and the Toledo, St. Louis & Western, the stock being issued to these roads in proportion to the amount of their liability under the agreement.

Houston Belt & Terminal.—This company, of which the Santa Fe, the St. Louis & San Francisco, the Trinity & Brazos Valley and the St. Louis, Brownsville & Mexico are owners, took over the Houston terminal property of the Gulf, Colorado & Santa Fe, 12 miles, as the nucleus of important terminals on which it was intended to spend several million dollars.

Baltimore & Ohio.—Since 1901 had owned about 75 per cent. of the \$13,000,000 stock of the Cleveland, Lorain & Wheeling, with 192 miles of line; bought the minority stock.

It was announced in April that the Little Kanawha Railroad, 35 miles, one of the small roads comprising the Little Kanawha syndicate properties owned jointly by the B. & O., the Pittsburgh & Lake Erie and the Pennsylvania, and operated under its own management, would thereafter be operated by the Baltimore & Ohio. It was stated that this did not mean that the property passed absolutely to the Baltimore & Ohio, but that the change was made to reduce the cost of operation.

Chicago, Milwaukee & Gary.—Incorporated in Illinois in March with \$10,000,000 authorized capital stock, and merged the Illinois, Iowa & Minnesota, 125 miles, the Milwaukee, Rockford & Eastern and the Illinois, Indiana & Gary.

National Railways of Mexico.—The merger plan under which this company, which is controlled by the Mexican government, took over control of and consolidated the Mexican Central, the National Railroad of Mexico, the Mexican International, the Interoceanic of Mexico and the Hidalgo & Northeastern, was ratified on February 28 at the City of Mexico.

Illinois Central.—The Georgia Railroad Commission announced in March that control of the Central of Georgia had been bought by E. H. Harriman for the Illinois Central. In June, 1907, \$5,000,000 stock of the Central of Georgia was bought by Oakleigh Thorne and Marsden J. Perry from the Richmond Terminal reorganization committee for \$3,000,000. It turned out that they were acting as agents for Mr. Harriman, who did not wish his control of the property to be known until the contest for con-

trol of the Illinois Central, in whose interest he acted, was settled.

See Tennessee Central.

Sandy River & Rangeley Lakes.—Organized in Maine in January to consolidate the Sandy River Railroad, 18 miles; the Franklin & Megantic Railway, 15 miles, and the Kingfield & Deare River, 16 miles, all narrow gage. It was understood the Phillips & Rangeley also would be acquired. Stock, \$241,000. A mortgage was put on the property to retire \$292,000 bonds of the constituent companies.

Birmingham & Gulf Railway & Navigation Co.—Bought the 12 miles of belt railway formerly owned by the Tuscaloosa Belt Railway at Tuscaloosa, Ala.

Union Pacific.—Took over the property of the Leavenworth, Kansas & Western between Leavenworth, Kan., and Miltonville, 166 miles, and the Topeka & Northwestern, a cut-off from Menaken, Kan., to Onaga, with an extension to Marysville, 69 miles.

Chesapeake Western.—All the stock and bonds of this company, 41 miles, were sold in April to W. E. D. Stokes, New York City.

Southern Railway.—Bought the Virginia & Southwestern, which took over the Virginia & Southeastern, a projected line; the Houston River and the Black Mountain. The two latter roads, 40 and 30 miles long, and the Virginia Southwestern, make a line 210 miles long.

See Tennessee Central.

Tonopah & Tidewater Railway.—Organized as a holding company under the laws of Delaware with \$5,280,000 authorized capital stock, to take over the Tonopah & Tidewater Railroad, 180 miles, and the Bullfrog-Goldfield Railroad, 81 miles. The interests that controlled the Tonopah & Tidewater dominate the holding company. The "A" stock, of which there is \$3,640,000, was exchanged for the \$1,500,000 capital stock of the Tonopah & Tidewater Railroad, and the "B" stock, of which there was \$1,640,000, was exchanged for the \$2,000,000 outstanding stock of the Bullfrog-Goldfield.

Southern Pacific.—Bought all the rights and franchises of the Santa Clara & Interurban, organized to build a network of electric lines in the suburban district of San Francisco.

It was reported that E. H. Harriman had got control of the Ocean Shore Railroad, a concession which includes a right-of-way through San Francisco.

Tennessee Central.—The Illinois Central and the Southern Railway issued circulars saying they had decided not to exercise their option to buy the control of the Tennessee Central, 29 miles. The option expired at midnight June 30, and the Southern and the Illinois Central at that time ceased jointly to operate the property, which they had operated since 1905, and returned it to the stockholders.

St. Paul & Des Moines.—Bought the property of the Des Moines, Iowa Falls & Northern, 75 miles, and is building an extension of the road from Iowa Falls, Iowa, to Mason City. Contracted to pay \$902,500 for the property of the selling company, and to assume its indebtedness. Capital stock, \$2,500,000.

Denver & Rio Grande.—This road, the Rio Grande Western and all subsidiaries in Colorado and Utah, except the Rio Grande Southern, were merged. A bond issue of \$150,000,000 was authorized, of which about \$90,000,000 was to be used for refunding.

Great Northern.—The Vancouver, Victoria & Eastern, a subsidiary of this road, took over the property of the Vancouver, Westminster & Yukon. Paid up capital stock, \$102,200.

Wheeling & Lake Erie.—The receivers in November returned the Lorain & West Virginia, 30 miles, to its original owners. The Wheeling & Lake Erie at the same time was released from its guarantee of the L. & W. Va.'s \$2,000,000 50-year, 4 per cent. bonds of 1906-1956.

Pennsylvania Railroad.—Acquired on April 1 Bald Eagle Valley, 94 miles, which had before been operated under lease.

Pere Marquette.—Bought the property of the Barry Transportation Company for \$80,100.

Kansas City Terminal.—Bought the stock of the Kansas City Belt Railway, 60 miles. The Kansas City Terminal Railroad Company was organized in 1906 by ten roads, each owning one-tenth of its stock, to build a new passenger

station and terminals at Kansas City, Mo. Capital stock paid in, \$550,000; funded debt, \$2,500,000.

Norfolk & Western.—Stockholders approved purchase of property and franchises of the Lynchburg Belt Line & Connecting, the Pocahontas & Western, the Caretta, the West Virginia Southwestern, and the Big Stony; also, it is stated, the purchase of the right-of-way and railway of the Big Sandy, East Linn & Glasgow.

Chicago, Burlington & Quincy.—Late in December, the directors of the Chicago, Burlington & Quincy voted to ratify the purchase of a controlling interest in the common stock of the Colorado & Southern, and as we are going to press, negotiations are said to be nearly completed for the transfer of the controlling interest from Edwin Hawley and associates, who have previously controlled the Colorado & Southern, to the Burlington.

RAILWAY BUILT IN 1908.

UNITED STATES.
Table Showing Mileage Built in 1908, Classified by States.

	No. of Cos. building.	1908.	No. of Cos. building.	1907.
Alabama	2	54.60	6	154.82
Alaska	..	..	4	91.00
Arizona	..	..	1	26.66
Arkansas	3	176.52	11	96.37
California	11	314.08	12	240.19
Colorado	3	77.72	3	22.38
Connecticut	..	..	..	..
Delaware	..	..	..	..
District of Columbia	..	..	1	7.60
Florida	2	27.00	11	251.65
Georgia	4	95.75	5	132.92
Idaho	4	164.94	5	135.89
Illinois	2	10.71	4	15.54
Indiana	2	15.01	8	101.82
Iowa	2	18.40	..	..
Kansas	..	..	2	16.25
Kentucky	3	34.29	5	48.33
Louisiana	5	110.72	13	384.72
Maine	..	..	1	27.75
Maryland	..	..	1	25.50
Massachusetts	..	..	..	..
Michigan	4	71.00	7	28.85
Minnesota	5	130.27	6	158.09
Mississippi	1	8.50	9	201.29
Missouri	3	20.98	7	86.15
Montana	3	537.63	4	191.75
Nebraska	2	52.58	2	37.51
Nevada	2	81.10	7	218.30
New Hampshire	..	..	..	..
New Jersey	3	4.23	1	0.56
New Mexico	1	24.50	2	83.80
New York	3	41.12	9	40.39
North Carolina	4	70.70	9	148.83
North Dakota	1	20.00	3	183.83
Ohio	1	10.00	2	29.98
Oklahoma	1	17.90	7	223.20
Oregon	4	79.09	3	183.83
Pennsylvania	4	20.39	19	121.78
Rhode Island	1	1.83	..	..
South Carolina	1	4.00	5	57.50
South Dakota	1	18.20	7	337.73
Tennessee	7	93.58	12	56.45
Texas	8	165.57	18	339.32
Utah	1	3.00	2	24.10
Vermont	..	..	..	..
Virginia	5	168.06	7	177.82
Washington	4	363.00	7	324.54
West Virginia	1	22.20	8	145.97
Wisconsin	2	11.73	5	116.87
Wyoming	3	74.22	4	66.71
Total	119	3,214.02	265	5,212.46
Canada	10	1,248.56	12	976.70
Mexico	5	435.25	9	333.03
Panama	1	7.00	..	..

UNITED STATES.

ALABAMA.
Atlanta, Birmingham & Atlantic—Talladega to Pelham..... 49.60
Memphis & Chattanooga (Southern)—Between Stevenson and Ala.-Tenn. state line..... 5.00

ARKANSAS.
Gould Southwestern—Champion to Star City..... 54.60
Missouri & North Arkansas—Near Arlberg to Helena..... 12.00
Rock Island, Arkansas & Louisiana (C. R. I. & P.)—Crossett to end of track..... 164.00
..... 0.52

CALIFORNIA.
Bakersfield & Ventura—Nauman to Round Mountain, 5.00 miles; St. Franchise to Oxnard, 2.00 miles; total..... 7.00
California Northeastern (So. Pac.)—Erickson to Calif.-Ore. state line..... 28.94
Central California (So. Pac.)—Newark to Redwood City..... 7.08
Nevada & California (So. Pac.)—Mojave to Sliding No. 13..... 52.80
Nevada-California-Oregon—Likely to Alturas..... 20.00
Ocean Shore—Pedro Valley to Tunitas, 20.30 miles; Folger to Swanton, 1.60; total..... 21.90
Peninsular (So. Pac.)—Monte Vista to Vasona..... 7.26
Sacramento Southern (So. Pac.)—Sacramento to Del Rio..... 4.45
Southern Pacific—Colorado to Potholes, 12.34 miles; San Ramon to Pleasanton, 9.58 miles; total..... 21.92
Sunset Western (So. Pac.)—From Pentland north..... 12.73
Western Pacific—Near Beckwith to Willow Creek, 4.70 miles; between Oakland and Berry Creek, 125.30 miles; total..... 130.00

314.08

COLORADO.

Colorado Railroad (C. & S.) Near Ft. Collins..... 4.90
Denver, Northwestern & Pacific—Yarmony to Steamboat Springs..... 69.00
Union Pacific—Carr to Colo.-Wyo. state line..... 3.82

FLORIDA.

Atlanta & St. Andrews Bay—Youngstown to Panama City.. 21.00
Birmingham, Columbus & St. Andrews—Warsaw to Morrison.. 6.00

GEORGIA.

Georgia & Florida—Nashville to Valdosta, 27.40 miles; on Willacooche Cut-off, 5.40 miles; Douglas to Garnet, 9.60 miles; Hazelhurst north to the Altamaha river, 7.60 miles, total..... 50.00
Lawrenceville Branch Railroad—Lawrenceville to Suwanee.. 10.00
St. Mary's & Kingsland—St. Mary's to Kingsland..... 10.75
Savannah, Augusta & Northern—Statesboro to Garfield..... 25.00

IDAHO.

Chicago, Milwaukee & St. Paul—On Pacific Coast Extension.. 97.00
Idaho Northern—Enaville to Monarch..... 33.00
Spokane & Inland Empire—Moscow to Idaho-Wash. state-line..... 8.90
Northern Pacific—On the extension from Cul de Sac to Grangeville..... 31.04

ILLINOIS.

Illinois Central—Kensington to Ill.-Ind. state line..... 5.71
St. Louis & Illinois Belt—Connection with Vandalia to end of track..... 5.00

INDIANA.

Chicago, Lake Shore & Eastern—Pine to Cavanaugh, 2.61 miles; Dixie to Gibson, 11.40 miles; total..... 14.01
Illinois Central—Hammond to Ind.-Ill. state line..... 1.00

IOWA.

Chicago & North Western—Extension of coal roads from Shaft No. 11 to Shaft No. 15, near Buxton..... 1.40
St. Paul & Des Moines—Sheffield to Mason City..... 17.00

KENTUCKY.

Chesapeake & Ohio—Hellier to Beddow..... 1.20
Paducah Northern—Paducah to a point on the Ohio river opposite Metropolis, Ill. 12.00
Pine Mountain (L. & N.)—Savoy to Gottliff, 18.60 miles; Nevisdale to Packard, 2.49 miles; total..... 21.09

LOUISIANA.

Kentwood & Eastern—Wilmer to mile post No. 22..... 5.00
New Orleans Great Northern—Shore Line Junction to Abita Springs; Franklinton to La.-Miss. state line..... 38.50
Rock Island, Arkansas & Louisiana (C. R. I. & P.)—Packton to Winn Parish line..... 0.21
Tremont & Gulf—Pyburn to Rochelle..... 29.00
Yazoo & Mississippi Valley (I. C.)—Baton Rouge toward Covington..... 38.01

MICHIGAN.

An Sable & Northern—Comins to Herrick's Camp..... 6.00
Detroit & Mackinac—Extension of Hillman branch..... 1.00
Keweenaw Central—Mohawk to Calumet, 6.00 miles; Phoenix to Phoenix Mill, 3.00 miles; total..... 9.00
Manistique—Grand Marais to Wilman..... 55.00

MINNESOTA.

Duluth & Iron Range—Spurs to mines..... 1.80
Duluth, Missabe & Northern—Taconita Junction to Canisteo concentrating plant, 1.70 miles; Taconita Junction to Canisteo mine, 0.75 miles; total..... 2.45
Great Northern—Greenbush to Warroad..... 42.52
Minneapolis & Rainy River—On Little Falls extension, 1.50 miles; Bass Lake to Stanley, 2.00 miles; total..... 3.50
Minneapolis, St. Paul & Sault Ste. Marie—Mississippi River to Moose Lake..... 80.00

MISSISSIPPI.

New Orleans Great Northern—Miss.-La. state line to Tyler-town..... 8.50

MISSOURI.

Missouri & North Arkansas—Near Chester to Neosho..... 12.25
Missouri Southern—Ohlman to Bunker..... 7.70
Springfield Southwestern (Mo. Pac.)—End of track near mile post No. 34 into Springfield..... 1.03

MONTANA.

Billings & Northern (Gt. Nor.)—Between Armington and Laurel..... 161.84
Chicago, Milwaukee & St. Paul—On Pacific Coast Extension.. 354.00
Northern Pacific—St. Regis to Paradise..... 21.79

NEBRASKA.

South Omaha & Western (So. Pac.)—From 4.07 miles east of Lane to Summit..... 7.54
Union Pacific—Lutherville to Kelly..... 45.04

52.58

NEVADA.	
Bullfrog Goldfield (Tonopah & Tidewater)—Milltown to Goldfield	1.60
Western Pacific—Shafter to Elko	79.50
	81.10
NEW JERSEY.	
Newark & Hudson (Erie)—From point on the New York & Greenwood Lake to connection with the Newark branch near Harrison	2.43
New York & Greenwood Lake (Erie)—On Hackensack Meadows, connecting with Penhorn Creek Railroad	1.04
Penhorn Creek (Erie)—On Hackensack Meadows	0.76
	4.23
NEW MEXICO.	
Santa Fe, Raton & Des Moines—Carrisbrook to Cunningham, 9.50 miles; Des Moines to Capulin, 15.00 miles; total	24.50
NEW YORK.	
Erie—Penn.-New York state line to Nioba Junction	1.57
Erie & Jersey (Erie)—Otsville to Highland Mills	34.35
New York, Auburn & Lansing—South Lansing to Ithaca	5.20
	41.12
NORTH CAROLINA.	
Carolina, Clinchfield & Ohio—Between Altapass and Bostic	26.00
Durham & Charlotte—Near Little River to Troy	2.00
East Carolina—Between Farmersville and Hookerton	3.10
Washington & Vandemere—Washington to Vandemere	39.60
	70.70
NORTH DAKOTA.	
Northern Dakota—Edinburg to Concrete	20.00
OHIO.	
Sugar Creek & Northern (W. & L. E.)—Bolivar to Orrville	10.00
OKLAHOMA.	
Wichita Falls Route—Between Red River Junction and Lawton	17.90
OREGON.	
California Northeastern (So. Pac.)—From Ore.-Cal. state line to Calor	1.59
Northwestern (Ore. Short Line)—Blakes to Robinet	30.00
Oregon Railroad & Navigation Co.—On Elgin Extension, from east of Palmer Junction toward Joseph	47.00
Rogue River Valley—Jacksonville to Rock Crusher	0.50
	79.09
PENNSYLVANIA.	
Cambria & Clearfield. (Pennsylvania)—On Hillman Branch, from Hillman to Clover river	5.88
Columbus & Erie (Erie)—From three miles east of Columbus to one mile west of Lottsville	4.55
Pennsylvania, Monongahela & Southern. (Pennsylvania)—Millsboro to Riees Siding	2.46
Pennsylvania—On Yukon Branch, from Hunker to Yukon, 4.42 miles; on Newberry Dyke line, from Newberry to Williamsport, 0.90 miles; on Wimber Branch, from mine No. 41 to mine No. 42, 2.18 miles, total	7.50
	20.39
RHODE ISLAND.	
New York, New Haven & Hartford—Providence to East Providence	1.83
SOUTH CAROLINA.	
Greenville & Knoxville—Marietta to Cleveland	4.00
SOUTH DAKOTA.	
South Dakota Central—Hayti to Watertown	18.20
TENNESSEE.	
Carolina, Clinchfield & Ohio—Between Tenn.-Va. state line and Johnson City	20.27
Illinois Central—Aulon toward Nonconah	5.31
Little River—Forks to Elkmount	15.00
Nashville, Chattanooga & St. Louis—Reid Hill to Prior Ridge	4.10
Swan Creek (L. & N.)—Mt. Pleasant to Faucett	17.10
Tennessee & Carolina Southern (Southern)—On Bushnell extension, from Maryville to Abram's Creek	25.30
Tennessee Railway—Smoky Junction to Nick's Creek, 3.00 miles; Straight Fork to Baker Coal & Coke Co. mines, 3.00 miles; main line extended from Straight Fork, 0.50 miles; total	6.50
	93.58
TEXAS.	
Beaumont-Saratoga Transportation Company—End of track to Brazier station of the St. Louis & San Francisco	4.00
Burr's Ferry, Brownel & Chester—Aldridge to Turpentine	3.00
Chicago, Rock Island & Gulf—Amarillo to Wildorado, 20.60 miles; between Carrollton and Irving, 7.60 miles; total	28.20
Groveton, Lufkin & Northern—Veitch to Vair	21.20
Kansas City, Mexico & Orient—Benjamin north to Tex.-Okla. state line	71.00
Roscoe, Snyder & Pacific—From a point 14 miles northwest of Roscoe to Snyder	16.42
St. Louis, Brownsville & Mexico—Spur from Buckeye	5.25
Wichita Falls Route—Olney to Newcastle	12.50
	161.57
UTAH.	
Salt Lake & Ogden—End of track near city limits into Ogden	3.00
VIRGINIA.	
Carolina, Clinchfield & Ohio—From Clinch river to Va.-Tenn. state line	38.56
Chesapeake & Ohio—On Potts Creek Branch from Jordan Junction to Bess	2.00
Interstate—Appalachia toward Kent, 2.00 miles; Blackwood to Norton, 3.40 miles; total	5.40

Virginia Air Line—Palmyra to Strathmore	13.00
Virginian—Nutch to Phenix, 29.50 miles; Manson to Clayton, 23.30 miles; Monefa to Hardy, 11.60 miles; Fagg to Pembroke, 29.50 miles; Big Stony to New River, 15.20 miles; total	109.10
	168.06
WASHINGTON.	
Centralia Eastern—Wabash to Mendota	9.00
Chicago, Milwaukee & St. Paul—On Pacific Coast Extension	339.00
Ilwaco Railroad (O. R. & N.) east of Ilwaco	9.00
Spokane & Inland Empire—Palouse to Wash.-Idaho state line	6.10
	363.10
WEST VIRGINIA.	
Virginian—East River to King	22.20
WISCONSIN.	
Chicago & North Western—Cut-off connecting Madison and Wisconsin divisions south of Milwaukee	2.38
Chicago, St. Paul, Minneapolis & Omaha (C. & N. W.)—Draper to end of track	9.35
	11.73
WYOMING.	
Laramie, Hahn's Peak & Pacific—Laramie to Albany	40.00
Saratoga & Encampment—Saratoga to Encampment	21.00
Union Pacific—Wyo.-Colo. state line to Borie, 9.48 miles; Speer to Corlett, 3.74 miles; total	13.22
	74.22
PANAMA.	
Panama Railroad—Mindi to Gatun, 2.50 miles; Ciameto to Bas Ohispo, 2.10 miles; Pariaso to Miraflores, 2.40 miles; total	7.00
MEXICO.	
Cananea, Yaqui River & Pacific (So. Pac.)—Del Rio, Son., to Lomas, 75.00 miles; Tubacas, Son., to Aguas Calientes, 27.00 miles; total	102.00
Inter-California (So. Pac.)—From a point 24.22 miles south of the international boundary to Tecolote	13.35
Mexican Pacific—From kilometer 217.60 in Jalisco to Jalisco-Colima state line, 6.00 miles; in Colima from Colima-Jalisco state line, south 45.00 miles; total	51.00
Mexican Pacific Coast (So. Pac.)—Algodon, Sin., to Quila, 160.00 miles; Rio Piaxtla, Sin., to a point south of Mazatlan, 53.00 miles; Orendain, Jal., to Tequila, 25.00 miles; total	238.00
*Mexican Southern—Tehuacan to Esperanza	30.90
	435.25

*This mileage is a conversion from mule to steam traction.

CANADA.	
Canadian Northern—Rossburn, Man., to Russell, 23.00 miles; Saskatoon, Sask., to Zelandia, 75.00 miles; Dolmeny, Sask., to Laird, 28.00 miles; Swan River, Man., to End of Track, 21.00 miles; on Pas Mission branch in Keewatin, 20.00 miles, total	170.00
Canadian Pacific—From Teulon, Man., north 2.00 miles; on Mobray extension, in Manitoba, 4.00 miles; between Weyburn, Sask and Stoughton, 25.00 miles; between Wolseley, Sask and Reston, 24.00 miles; between Sheho, Sask., and Lanigan, 46.10 miles; on Pheasant Hills branch, in Saskatchewan, 74.60 miles; from Moose Jaw, Sask., northeast 101.60 miles; between Lethbridge, Alb., and McLeod, 12.00 miles; total	289.30
Central Ontario—Between Maynooth, Ont., and Lake St. Peter	8.50
Crow's Nest Southern (Gt. Nor.)—Between Fernie, B. C., and Michel	20.98
Eastern British Columbia—McGillivray, B. C., to Corbin	14.00
Grand Trunk Pacific—Winnipeg, Man., west toward Portage la Prairie, 45.00 miles; west of Hubbard, Sask., to west of Watrous, 102.90 miles; Earl, Sask., to Sask-Alb. state line, 106.50 miles; Sask-Alb. state line west, 48.80 miles; near mile post No. 786 west, 5.00 miles; on Lake Superior branch in Ontario, 89.20 miles; from Moncton, N. B., west, 37.00 miles; at Chipman, N. B., 3.00 miles; from 7.00 miles east of Belair, Que., to 11.00 miles west, 18.00 miles; from 17.00 miles east of St. Thelie, Que., to 16.00 miles west, 33.00 miles; from 16.00 miles east of La Tuque, Que., to 15.00 miles west, 31.00 miles; in province of Manitoba, 48.00 miles; total	621.00
Quebec, Montreal & Southern (D. & H.)—Pierreville, Que., to St. Phillomene	48.50
Sydney & Louisburg—Grand Lake, B. C., to Victoria Colliery	7.00
Vancouver, Victoria & Eastern (Gt. Nor.)—International boundary near Blaine, Wash., to Oliver, 11.30 miles; Oliver, B. C., to New Westminster, 8.63 miles; Cloverdale, B. C., to Sumas, 29.36 miles; total	49.29
Atlantic, Quebec & Western—Port Daniel to Pabos	20.00
	1,248.56

Breitenbach, the Prussian Railway Minister, in discussing before the Prussian House of Delegates the appropriation for the pay of railway employees, amounting to more than \$11,000,000, said that of this amount 56.5 per cent. went to the lower class of employees, 42.6 to the intermediate class (which consists largely of discharged non-commissioned officers of the army, who have been induced to remain with the army, and on whom its efficiency largely depends, by this provision for their permanent employment), 42.6 per cent., and to the higher class, whom alone we would call railway "officers," 0.9 per cent. The average pay of this last class is advanced

5.6 per cent.; of the intermediate class, 14.3 per cent.; of the lowest class, 17.5 per cent. The highest salary paid is \$2,618, but there are some other allowances, and especially a retiring pension which provides for a man till his death.

REVIEW OF 1908 ANNUAL REPORTS.

BY RAY MORRIS,

Managing Editor, *Railroad Age Gazette*.

The accompanying review of a group of characteristic annual reports by means of graphic diagrams, making general tendencies stand out sharply, is made in the same manner as in previous years. Some detail changes have been required, however, because of the new accounting regulations of the Interstate Commerce Commission. The changes in accounts occasioned by these regulations required several roads to be eliminated from the totals because their records were not made on the same basis as in previous years, and the totals had therefore to be corrected and the diagrams redrawn. Even after these adjustments, Fig. 1, showing the increase of gross earnings, operating expenses and net earnings of 17 roads from 1899 to 1908, inclusive, presents slight

in net began to be made just about at the close of the fiscal year. Of course, the table cannot show these interesting things, because it combines the closing months of the boom years with the first months following a panic.

The same criticism is true of all the other diagrams that are shown. Yet the diagrams show strictly what they purport to show—the comparison of one June 30 fiscal year with another.

The roads composing Fig. 1 are as follows:

Atchison, Topeka & Santa Fe,	Illinois Central
Baltimore & Ohio,	Louisville & Nashville,
Chesapeake & Ohio,	New York, New Haven & Hartford
Chicago, Burlington & Quincy,	Norfolk & Western,
Chicago & North-Western,	Northern Pacific,
Chicago, Milwaukee & St. Paul,	Philadelphia & Reading,
Cleve., Cin., Chic. & St. Louis,*	Southern,
Erie,	Wabash.
Great Northern,	

*Year ending December 31, 1907.

Fig. 2 shows the increases per cent. in the three principal divisions of operating cost on 19 roads, with 1903 as a base. In 1908 the tendency which began in 1906, for the conducting-transportation curve to bend upward even more sharply than the maintenance-of-equipment and maintenance-of-way curves, is continued. The effect of the 1904 economies was particu-

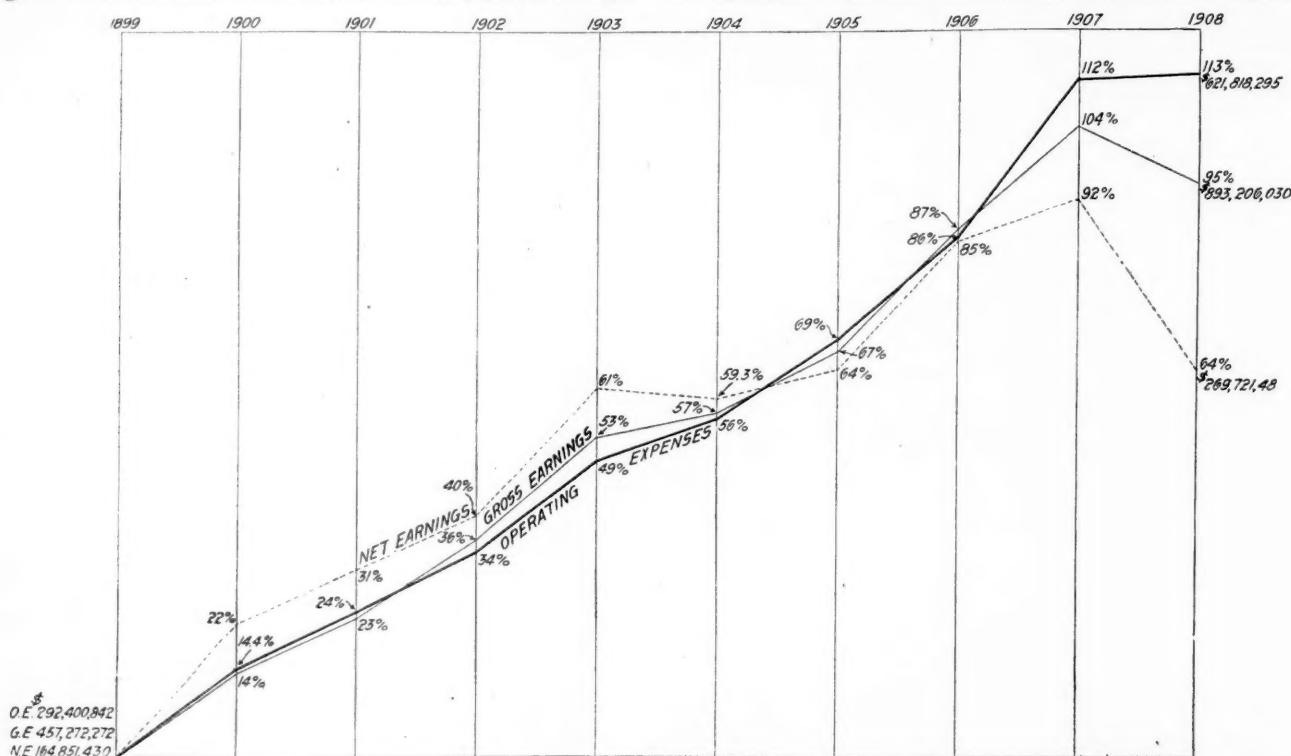


Fig. 1—Increases Per Cent. from 1899 Base. Seventeen Roads.

inaccuracies this year on account of these accounting changes. But the inaccuracies have been carefully weighed, and they are not sufficient to impair the usefulness of the diagram.

Fig. 1 shows a slight increase in operating expenses as compared with 1907; a considerable decrease in gross earnings, and a very large decrease in net earnings, so that the general appearance of the curves for the last year accentuates the tendency which they showed after 1906 to separate more and more widely, with operating expenses at the top. It should be observed, however that the necessary use of the fiscal year ending June 30 in preparing these figures tends in a measure to neutralize some of the most striking results of the calendar year 1908. During July, August, September, October, and the greater part of November, 1907, gross earnings and operating expenses were both very high, and net suffered severely. During the rest of the 1908 fiscal year gross earnings fell off tremendously, while all hands were engaged in an intense effort to get operating expenses down below earnings. It took several months to accomplish this, and actual gains

largely apparent in the conducting-transportation curve, but, beginning with 1906, traffic was so enormous and wages were increasing so fast that the conducting-transportation curve bends upward in much the sharpest angle to be seen on the entire diagram, and continues to increase right up to June, 1908, although the increase is not so fast as it was in the 1907 year. It is a fair guess that this curve will again cross the maintenance-of-way curve in 1909.

Fig. 2 is based on aggregate results of the following roads:

Atchison, Topeka & Santa Fe,	Great Northern,
Buffalo, Rochester & Pittsburgh,	Illinois Central,
Baltimore & Ohio,	Missouri, Kansas & Texas,
Chesapeake & Ohio,	New York, New Haven & Hartford
Chicago & North-Western,	New York Central,*
Chicago & Alton,	Norfolk & Western,
Cleve., Cin., Chic. & St. Louis,*	Rock Island,
Chicago, Milwaukee & St. Paul,	Southern Pacific,
Chicago, Burlington & Quincy,	Wabash.
Denver & Rio Grande,	

*Year ending December 31, 1907.

Fig. 3 shows very graphically the tendency of taxes to increase faster than net earnings, especially since 1903. This year the tax curve crosses the earnings curve for the first time.

Fig. 3 is based on the following 16 roads:

Atchison, Topeka & Santa Fe,
Baltimore & Ohio,
Chesapeake & Ohio,
Chicago, Burlington & Quincy,
Chicago & North-Western,
Chicago, Milwaukee & St. Paul,
Cleve., Cin., Chic. & St. Louis,*
Erie,

Great Northern,
Illinois Central,
Louisville & Nashville,
New Haven,
Norfolk & Western,
Northern Pacific,
Southern Railway,
Wabash.

*Year ending December 31, 1907.

Fig. 4, which we present for the first time this year, is

group was composed of 126 roads. But since the percentage of decrease is derived each month from a comparison of the returns of certain roads with the returns of the identical roads in the same month of the previous year, the percentage returns as given show an accurate picture. It is interesting to note that the early returns at hand for the first weeks in December indicate a slight increase over the same weeks in 1907, although they are not yet as good as they were in the same weeks of 1906.

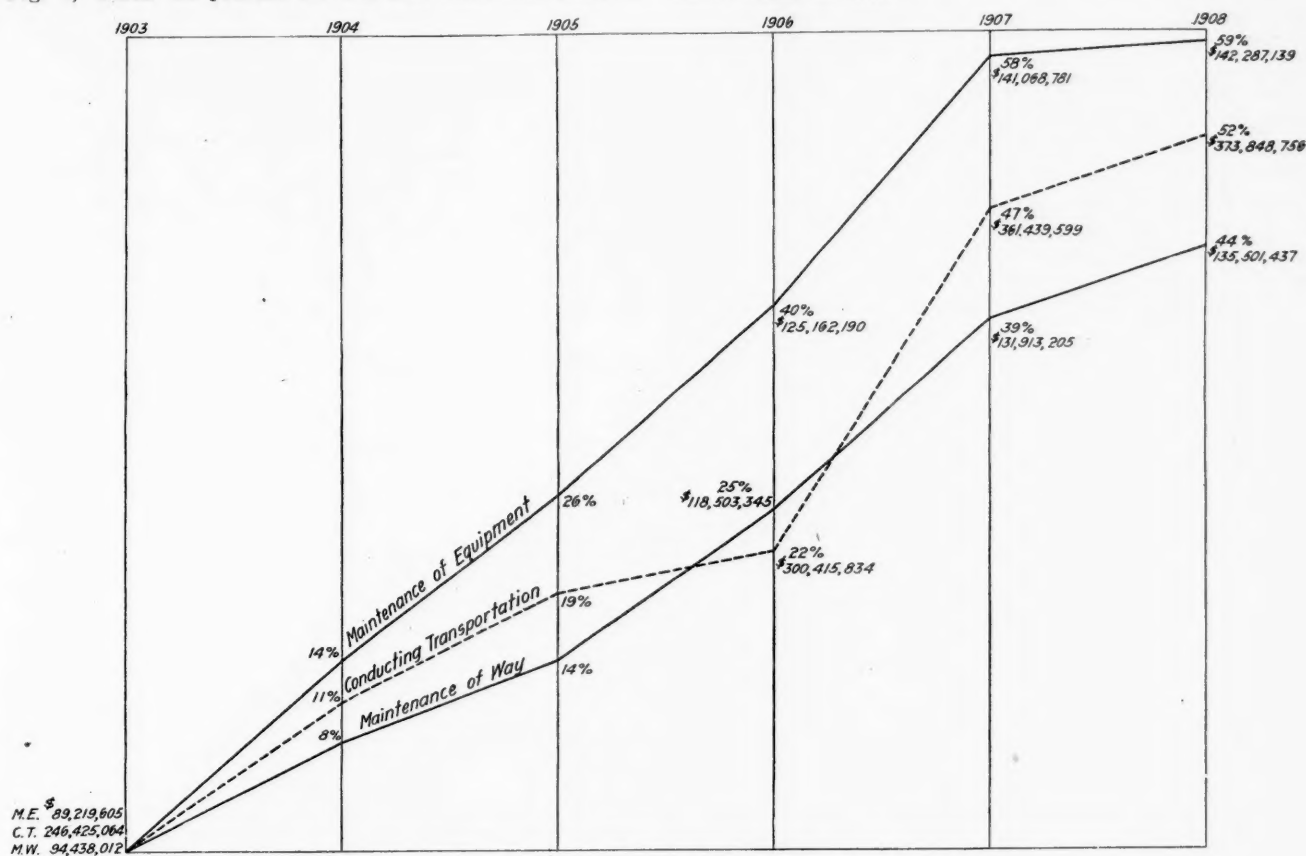


Fig. 2—Increases Per Cent. from 1903 Base. Nineteen Roads.

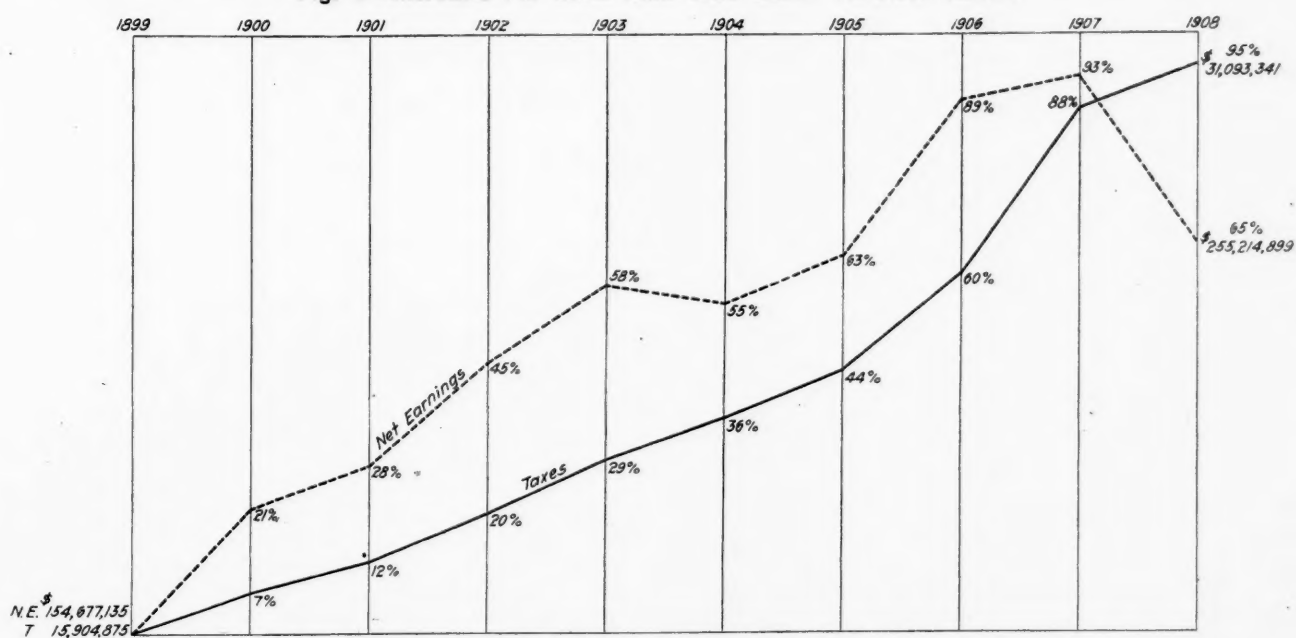


Fig. 3—Increases Per Cent. from 1899 Base. Sixteen Roads.

plotted from the aggregate gross earnings collected by the *Commercial and Financial Chronicle* from large groups of roads. These groups are not uniform; thus, in October, 1908, only 47 roads are reported, while for March, 1908, the

Fig. 5 has been entirely redrawn this year to show more graphically the relation between the primary units, track and equipment, and the business done with these units. The diagram contains the composite results from two roads; the

Northern Pacific and the Union Pacific. Both these companies have been extremely progressive, and they are close together in single-track miles, while the Northern Pacific exceeds in passenger miles and the Union Pacific in ton miles. The figure for single-track miles is obtained in a perfectly arbitrary way. Route miles are unsatisfactory in work of this sort, because they exclude second-track and sidings. Aggregate mileage, including sidings, mile for mile, is also a bad basis of comparison; therefore, we have adopted as our standard practice in the *Railroad Age Gazette* the assumption that single-track mileage is the sum of all first, second,

Fig. 6 also has been prepared for the first time this year, and is plotted from the statistics collected by *Poor's Manual of Railroads*, from approximately the entire railway mileage in the United States; hence it is impossible to continue these figures through 1908, as the returns are not yet available. It carries out on a broader basis the points emphasized by the two very exceptional roads in Fig. 5, in its comparison of revenue freight train-mileage with ton-miles of freight, and shows the steady increase in the loading per train which has been making for economical operation, and incidentally has been breaking rails and car wheels.

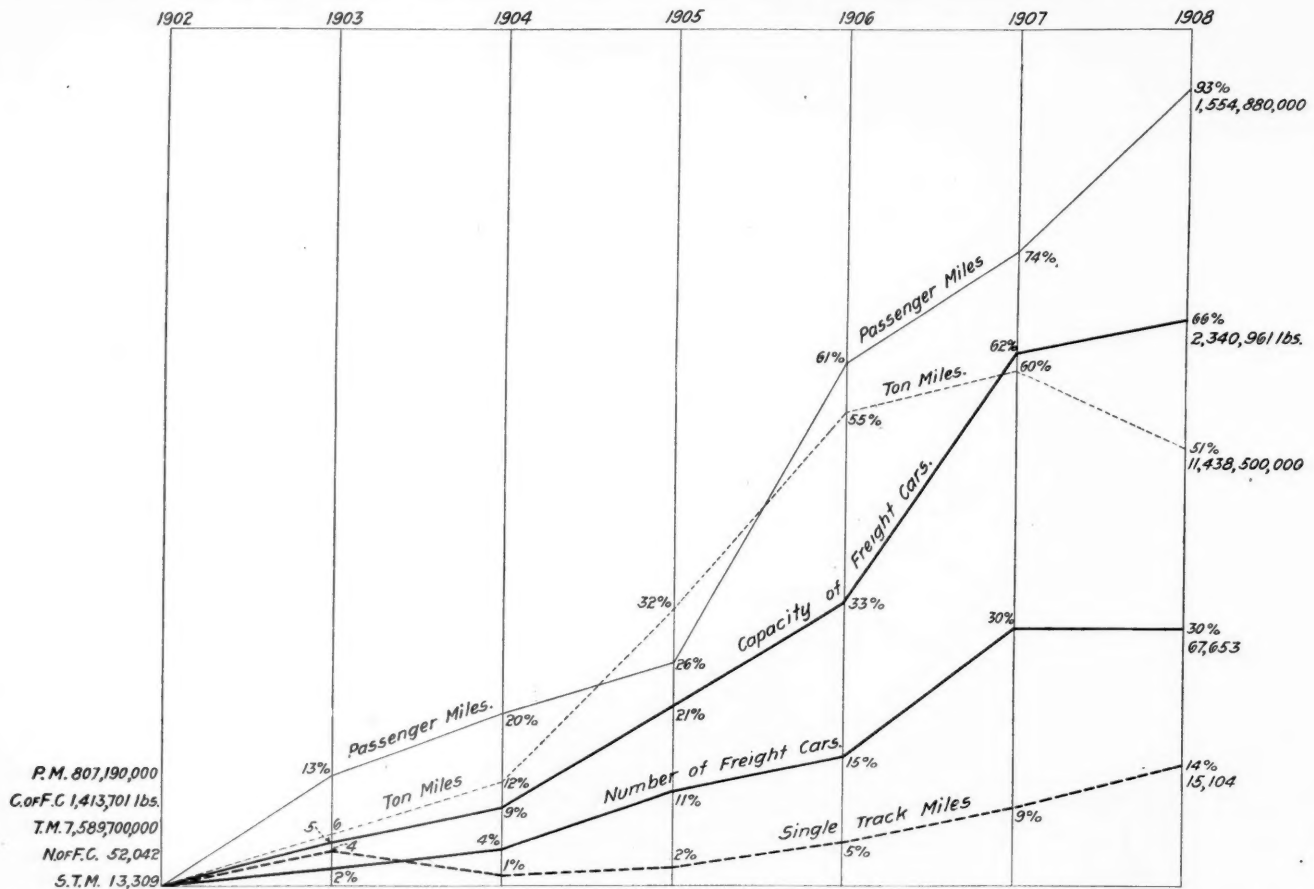


Fig. 4—Composite Diagram; Union Pacific and Northern Pacific. Increases Per Cent. from 1902 Base.

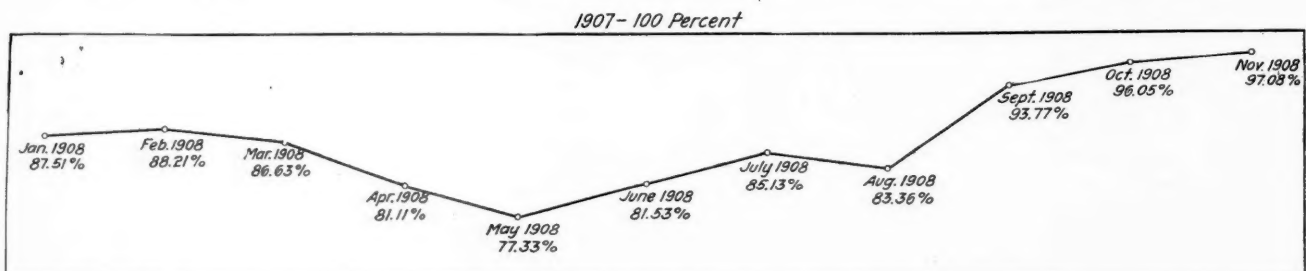


Fig. 5—Gross Earnings, 1907 and 1908, of Large Group of Roads. Each Month in 1907 Is Regarded Separately as Representing 100 Per Cent., and the Comparison Is by Months.*

third and fourth track, and one-half the mileage of sidings. The adoption of this arbitrary standard grew out of comparisons of maintenance-of-way cost on different roads, since, roughly speaking, it costs about as much to maintain one mile of main line as it does to maintain two miles of sidings.

The results of this table are not surprising, but they are interesting in showing how average car capacity has increased per unit of equipment and how very rapidly the density of the business has increased per track unit.

*The statistics from which this table is plotted are taken from the *Commercial and Financial Chronicle*.

The table of revenue trainloads for a series of years has had to be recast this year because of the ruling of the Interstate Commerce Commission that the train load figure is now to be obtained by adding the entire mileage of mixed trains to revenue freight-train mileage. Some roads have adopted this principle for years; others have ignored the Commission's ruling in their annual reports, but in cases where this form of accounting has been adopted for the first time this year, no comparison has been possible with previous years, and it has been necessary in consequence to eliminate the roads making the change. The average as shown this

year is thus the average of only 10 roads, instead of 17 roads, as in our previous annual statistical compilations, but this does not affect the validity of the figures.

Revenue Train Loads, in Tons.									
1908.	1907.	1906.	1905.	1904.	1903.	1902.	1901.		
Balt. & Ohio.....	408	433	420	399	401	416	406	381	
Buf., Roch. & Pitts.	530	542	525	507	439	441	424	406	
Ches. & Ohio.....	621	596	586	557	508	493	508	511	
Illinois Central....	352	364	353	319	278	288	275	235	
Lehigh Valley.....	530	526	504	501	486	485	467	467	
M., St. P. & S. S. M.	329	334	329	309	301	305	315	314	
Nor. Pacific.....	431	407	400	367	339	344	346	324	
St. L. & San Fran.	212	224	214	200	198	195	187	200	
St. L. Southwestern	311	323	315	296	285	282	256	236	
Wabash.....	361	360	348	293	280	302	285	283	

Av'ge, 10 roads...408.5 410.9 399.4 374.8 351.5 355.1 346.9 335.7

It will be observed that the temporary depression of 1904 had an immediate effect in reducing the average of revenue train loads because of the necessity of running a good many partially filled trains. The same effect appears this year. It is by no means uniform throughout the group, however. Several roads show the highest train loads in their history, the Chesapeake & Ohio, with 621 tons, being especially noteworthy. This road has had continuously the highest train-loading of any road in the list shown, and is probably not

divisions of the expense account, are set out a great number of primary divisions under which there are various instructions relating to the proper charges which are to be made in each case so far as can be determined. In practice, of course, each accounting officer must be left quite to himself to place such interpretation upon each rule as seems best adapted to the conditions prevailing and the various interpretations thus possible under these rules must be infinite. There have already arisen in one year 300 questions submitted to the Commission and decisions rendered thereon, and this must be but a very small proportion of the varying individual interpretations made by different officials. The questions of interpretation which may arise in another year may be 1,000 instead of 300, and in the ever changing progress of railroad accounting will the end ever be reached? And in the meantime it may be questioned if the Commission and its statisticians are not spending their time to no good purpose in an attempt to effect that which, as respects absolute attainment, is impossible.

Now what as to the benefits to the stockholder from this attempt to produce uniformity? Manifestly thus far there are

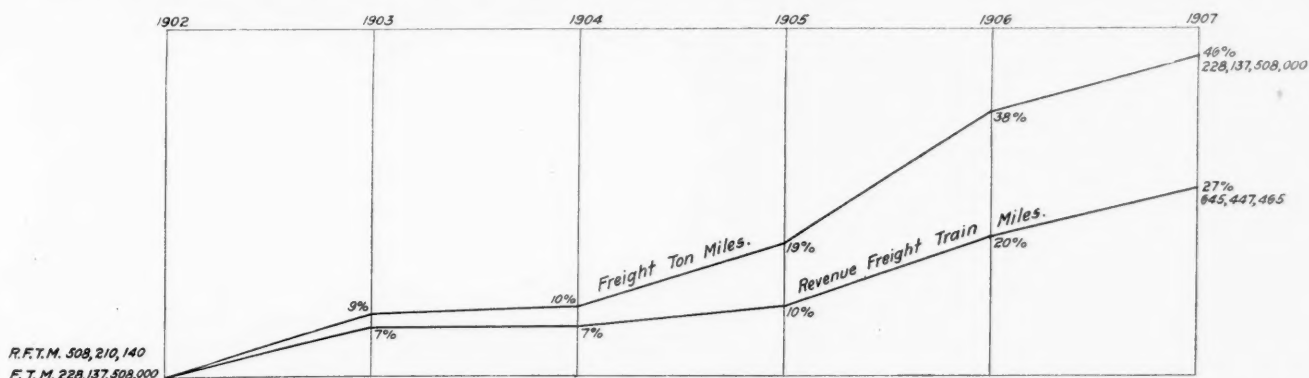


Fig. 6—Relation of Freight Ton Miles to Train Miles on a Group of Roads Representing Most of the Mileage of the Country. Increases Per Cent. from 1902 Base.*

exceeded by any road in the country, except by the Bessemer & Lake Erie, with its enormous ore trains, and by the Hocking Valley, with three-quarters of its tonnage made up of coal, coke and ores.

RAILROAD ACCOUNTING AND THE HEPBURN LAW.

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III.

IS UNIFORMITY PRACTICABLE?

In railroad reporting uniformity is for many reasons desirable; thus, for instance, it enables a more ready and intelligent comparison between the reports of one carrier and another, and one is better able to judge as to managerial efficiency and skill. But is it practicable? Many experienced railroad men say it is not because of the very different conditions under which different roads are operated. Whatever system is adopted to effect it must be more or less arbitrary and hence unfair to some carriers. Railroad accounting, we have endeavored to show, is a science constantly developing with the progress and improvement in railroad operations. An absolute and fixed system of accounts has never yet obtained. Hence, we believe uniformity is impracticable.

Certainly it would seem that the present vigorous efforts of the Commission illustrate that absolute uniformity is impossible. To illustrate: In its attempts to establish a uniform system of accounts the Commission issued a classification of operating expenses in which, under each of the main

none. That sort of uniformity is nothing to him when under the confusion now prevailing uniformity between the reports of even the same railroad company from year to year seems impossible. The investor finds the old tried plan or outline of statistical reports to which he had become used in a particular company done away with and a new one to be mastered. This is no small matter to the investigating stockholder, and is a disadvantage for which no present benefit has compensated.¹¹

REQUIREMENT OF MONTHLY STATEMENTS.

Under the Hepburn Law the Commission has "authority to require said carriers to file monthly reports of earnings and expenses, or special reports within a specified period * * *." This clause in the new law we consider a serious mistake. But it may be said that since the majority of the railroads already publish monthly statements of earnings and expenses the railroads cannot complain. In a limited degree this is true, but it seems unwise to incur the law with provisions which long experience has now proved unnecessary because of the voluntary acts of the companies themselves, and it is also a mistake to bind the railroads with too much red tape of law, particularly in matters of accounting in which a wide range of discretionary power should be left to the managers directly responsible for operating results. The presence of such laws, when the enforcement of them is placed in the hands of a particular commission or bureau with admin-

¹¹ Comparisons with former years are impossible. In the last annual report of the Hocking Valley Ry. Co., for instance, recently published, the company's president in explanation says that the new system of accounts varies in so many particulars relating to the revenue, expenses and methods of computation of freight and passenger statistics that an accurate comparison of such items between this and former years could not have been made without a vast amount of additional work and expense. See also President Thomas' remarks in the Lehigh Valley annual report, 1908, just issued. Similar testimony from other railroad officials could be adduced.

*The statistics from which this table is plotted are taken from Poor's Manual of Railroads.

istrative power, is a temptation which may lead to autocratic or bureaucratic rule.

Indeed in this instance the Commission, acting under this clause, has gone perhaps to the limit in its interpretation; for it is requiring of all the railroad companies a monthly report of their gross revenue, not only from all sources together, but from each of the main divisions which we have heretofore explained, and the operating expenses also are required to be detailed under their main divisions of maintenance of way and structures, of equipment, cost of conducting transportation, traffic and general expenses. The intelligent railroad man well knows that it is impossible to give with any reliability from month to month the exact proportion of operating expenses consumed, either in the maintenance charges or in the cost of transportation. Such details when given for the purpose of informing their stockholders or government officials are very misleading owing to the difference during the varying seasons of the year in the traffic density and the maintenance requirements. Heretofore in railroad accounting no company has attempted to apportion, nor can it intelligently apportion to a single month a uniform or proportionate part of the year's maintenance charges.

The monthly statements heretofore issued voluntarily by the railroads have been for the purpose of informing the public as to the net earnings and no more. Marshall M. Kirkman, one of the foremost writers in this country on the "Science of the Railways," says, in Volume 10 of his series, relating to "General Fiscal Affairs," on page 146, "A general examination of the items that make up the expense account of a railroad in many cases prove delusive. This is especially so when the expense extends over a short period only." We feel that in this matter the Commission has acted with great unwisdom. Whether or not any proper or advantageous information is given to the Commission by this unusual requirement we cannot say, but certainly the stockholder gains nothing at all. If the latter is inclined to think that he may the more closely follow the earning power of his railroad or the ability of the management in handling operating expenses, he will likely oftentimes be seriously misled, if not deceived, should he place much reliance upon the maintenance charges as set out for a single month.

We have heard this feature of regulation on the part of the Commission very severely condemned as being done in the interest of speculators. Such a charge is, of course, untrue; yet it is a fact that speculators and market operators, that body of intelligent and alert men ever active in Wall street, ready to profit by the construction or misconstruction intentionally placed upon every bit of news published in the financial district, gain a greater advantage or make more capital than the investor from such misleading reports. The monthly net earnings statement as published by the companies makes its appearance from 20 to 30 days before the statement published by the Commission, and in the former the comparative results of four successive years are much more readily comprehended. The publishing of the net earnings statement by the Commission, therefore, is at best an unnecessary bit of red tape accompanied with great expense both to the government and the railroads.

THE MONTHLY DEPRECIATION CHARGE.

The monthly depreciation charge on equipment is a very radical requirement prescribed by the Commission. This is of such a technical and scientific nature that an extended discussion of it in such an article as this is out of place. But let it be briefly said that in the conservation of railroad property the monthly depreciation charge is a most unsatisfactory method of accounting. It is declared by operating and accounting officials to be contrary to all sound principles. It should be remembered that of railroad property no very large share of the investment is placed in one central stationary plant on which the depreciation may be somewhat uniform, nor do railroads carry any franchise account which

needs to be written off. It is, of course, impossible to estimate intelligently the life of any particular kind of railroad property. The use or the wear and tear to which the property is subjected changes or varies in a most marked degree during different seasons of the year, in different sections of the country, on different parts of the same road, and with varying amounts of tonnage and train loads, all depending upon the diversified conditions which exist. The railroads in this country have always maintained and conserved their property in a most provident manner equalled by no other railroad system in the world; and their method of maintenance has been the actual replacement or repair of obsolete or worn out property when necessary and the cost of such replacement or repairs charged to operating expenses under the primary divisions of the maintenance account. But the theory of the Commission would seem to be, for illustration, that if a certain kind of locomotive has an estimated average life say of 20 years¹² the yearly depreciation would be one-twentieth of its value and the monthly charge would be one-twelfth of one-twentieth or one two-hundred-and-fortieth. Such a method may be fascinating to the theorist, but most absurd and unworkable in practice. It means an unreliable estimate in both the value and length of life of any piece of property. The adoption of this plan, if carried to its logical conclusions, would involve every railroad man in the country in an inextricable maze of guess work and confusion, and would finally paralyze the transportation industry. This requirement on the part of the Interstate Commerce Commission has involved a more radical change in railroad accounting than any which has heretofore made its appearance, and, we think, under a proper construction of the Hepburn Law is unwarranted by any words found therein.

Moreover, this entire question of maintenance and depreciation, involving as it does the appropriation and disbursement of railroad revenue, is quite beyond the province of a government commission. It is one of the responsibilities of corporate management. Not only has the Commission no warrant under the Hepburn Law for its stand, but the law itself, if it attempted to grant such power, would be unconstitutional, it being a taking of private property without due process of law. It is a piece of paternalism demoralizing in its effects to all sense of personal and managerial responsibility.

(To be continued.)

FOREIGN RAILWAY NOTES.

Those who would like to indulge their curiosity concerning the Hungarian railways are informed that a work on this subject is in progress, to be completed in 36 volumes, the first of which, on the history of these railways, has just been published.

The Swiss confederacy adds the Gotthard Railway to its State Railways system May 1 next, which was provided for in the company's charter. There is a dispute as to the purchase price, which is pending in the courts, but will very likely be settled by negotiation, as was the case with the other railways.

Belgian newspapers estimate the deficit of the State Railways for the current year at \$2,000,000, which is twice as much as earlier estimates. The management had heretofore proposed to advance the prices of certain commutation tickets (which are very low); but now there is talk of a general advance of rates for freight as well as passengers, and of abolishing the special rates on coal exported. Coal-users naturally favor this, and the disposition of the government is indicated by recent contracts for fuel, when it has taken large amounts of foreign coal.

¹² The actual durability might be one-half, one-fifth or twice the estimated average and in no two cases the same.

CARS AND LOCOMOTIVES ORDERED IN 1908.

The following tables show the new freight cars, passenger cars and locomotives ordered by American railways in 1908. The collection of this data involves a large amount of time and labor, and the compilation is necessarily subject to some slight omissions, but it is sufficiently accurate to meet the general purpose for which these statistics have been prepared. Practically all the data is derived from official sources, but in a few instances where no replies have been made to inquiries, figures from our regular weekly records have been used. Attention is called to the fact that these statistics refer to cars and locomotives ordered during the year; statistics of equipment built during the year are given elsewhere in this issue.

Orders received have been far smaller than for several

years. The car shops have not run 50 per cent. of their capacity during the year. Few have enough business booked to carry them until March 1, 1909, even with largely reduced shop forces. But inquiries for new rolling stock that have been received during the past two weeks indicate that the railways will place orders for a considerable amount of equipment early in 1909.

The totals show the ordering of 62,669 freight cars, 1,319 passenger cars and 1,182 locomotives. Of the freight cars, 15,561 are all-steel, and 19,651 have steel underframes. Of the passenger cars, 320 are all-steel, and 56 have steel underframes. Of the locomotives, 32 are compound. The totals for the last eight years are as follows:

	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Lcmvts.	4,340	4,665	3,283	2,538	6,265	5,642	3,482	1,182
Psg. crs.	2,879	3,459	2,310	2,213	3,289	3,402	1,791	1,319
Fght crs.	193,439	195,248	108,936	136,561	341,315	310,315	151,711	62,669

FREIGHT CARS ORDERED IN 1908.

Purchaser	No.	Kind	Capacity	Builder
Acme Red R. & Nor....	11	Box	60,000	Bradford Car
	*5	Gndla.	100,000	Bradford Car
J. T. Adams	8	Dump.	50,000	W. J. Oliver Mfg. Co.
Agar Packing Co.....	25	Refrig.	60,000	Amer. C. & F. Co.
Ala. Great So.....	10	Box	60,000	Gadsden Car Works
	3	Flat	80,000	Gadsden Car Works
	3	Gondola	80,000	Gadsden Car Works
Am. Dressed Beef.....	50	Refrig.		Amer. C. & F. Co.
Am. Steel & Wire.....	2	Rod	80,000	Erie Car Works
Anglo-Newf. Dev.....	5	Flat	60,000	Rhodes Curry
Ariz. Southern.....	*20	Inglsy.	100,000	Amer. C. & F. Co.
Ark. Okla. & West.....	15	Box	60,000	Haskell & Barker
Armour Car Lines.....	*10	Tank	60,000	Bettendorf
	†200	Refrig.	60,000	Company Shops
T. J. Asher & Sons.....	10	Dump	6 cu. yd.	W. J. Oliver Mfg. Co.
A. T. & S. F.....	†500	Refrig.	60,000	Amer. C. & F. Co.
Atl. Birm. & Atl.....	188	Gondola	80,000	Amer. C. & F. Co.
	30	Cabs.		South Atlantic
Atl. Coast Line.....	†500	Vnt. Bx.	60,000	South Baltimore
	†50	Phos'te.	80,000	Pressed Steel
Baker-Whit. Coal.....	1	Hopper	80,000	Middletown
Beaumont & Gt. Nr.....	2	Box	60,000	Company Shops
Per-White Cl. Mn.....	*250	Hopr.	100,000	Cambria
Birm. Southern.....	*175	Dump.	100,000	Pressed Steel
	*26	Gndla.	100,000	Pressed Steel
	*25	Tank	80,000	Erie Car Works
H. H. Brigham.....	†50	Gndla.	60,000	Middletown
Brown & Co.....	35	Gndla.	80,000	Mt. Vernon
Burrough Cons. Co.....	1	Cab.		Cobb Car Co.
Burr's F. B. & C.....	10	Dump	6 cu. yd.	W. J. Oliver Mfg. Co.
Cal. & Hec. Min. Co.....	1,000	Box	60,000	Rhodes Curry
Canadian Nor.....	15	Vans		Rhodes Curry
	10	Refrig.	60,000	Crossen Car
	20	Cab.	40,000	Crossen Car
	200	Box	60,000	Crossen Car
	100	Stock	60,000	Crossen Car
	750	Box	60,000	Canada Car
Canadian Pacific.....	†500	Box	80,000	Domin'n C. & F. Co.
	412	Ht. Cv.	100,000	Domin'n C. & F. Co.
	*6	Coal	100,000	Domin'n C. & F. Co.
	*3	Ore	100,000	Domin'n C. & F. Co.
	1,167	Box	60,000	Company Shops
	328	Flat	60,000	Company Shops
	75	Stock	60,000	Company Shops
	8	Refrig.	60,000	Company Shops
	7	Ht. Cv.	80,000	Company Shops
	70	Vans		Company Shops
Cananea Y. R. & P.....	†150	Flat	100,000	Amer. C. & F. Co.
	†100	Balst.	100,000	Amer. C. & F. Co.
	†25	Cab.		Standard Steel
Carolina C. & O.....	*1,500	Coal	100,000	Pressed Steel
	*500	Gndla.	100,000	Pressed Steel
	†250	Box	60,000	Pressed Steel
Central of Ga.....	33	Box	60,000	South Atlantic
Central Pacific.....	†370	Box	100,000	Amer. C. & F. Co.
	†100	Balst.	100,000	Amer. C. & F. Co.
	*25	Gndla.	100,000	Cambria
Chesap. & Ohio.....	12	Cab.		Amer. C. & F. Co.
Chicago & Alton.....	*2,000	Coal	100,000	Standard Steel
Chgo. & Ill. West.....	3	Cab.		Amer. C. & F. Co.
Chicago & N. W.....	1,100	Box	80,000	Haskell & Barker
	*750	Ore	100,000	Amer. C. & F. Co.
	†500	Gndla.	100,000	Amer. C. & F. Co.
	300	Flat	80,000	Amer. C. & F. Co.
	*250	Ore	100,000	Pullman
C. B. & Q.....	82	Box	80,000	Company Shops
Chgo. Cin. & L.....	212	Box	60,000	Haskell & Barker
	150	Coal	80,000	Haskell & Barker
	50	Frntre.	80,000	Haskell & Barker
	26	Stock	60,000	Haskell & Barker
	12	Cab.		Haskell & Barker
	10	Refrig.	60,000	Haskell & Barker
Chgo. Indpls. & L.....	†250	Coal	100,000	Haskell & Barker
	†240	Box	80,000	Haskell & Barker
	†25	Stock	60,000	Haskell & Barker
C. M. & St. P.....	†5,000	Box	80,000	Company Shops
	†2,500	Gndla.	100,000	Company Shops
	2,500	Stock	60,000	Company Shops
	70	Cab.		Company Shops
	†50	Cab.		Company Shops
	467	Dump	15&20 t.	Company Shops
C. St. P. M. & O.....	500	Box	80,000	Haskell & Barker
Chihuahua & Pac.....	20	Stock	60,000	Company Shops

* (asterisk) indicates steel cars.

† (dagger) indicates steel underframe cars.

Purchaser	No.	Kind	Capacity	Builder
C. N. O. & T. P.....	7	Box	60,000	Gadsden Car Works
	1	Gndla.	60,000	Gadsden Car Works
	1	Coke	60,000	Gadsden Car Works
Clark Car Co.....	*1	Ore	100,000	Ralston
Clear Lake Lbr. Co.....	*1	Tank	80,000	Erie Car Works
Cold Blast Trans.....	†300	Stock	60,000	Haskell & Barker
Colo. & Southern.....	50	Box	50,000	Denver Shops
	50	Gndla.	50,000	Denver Shops
	*20	Refrig.	50,000	Denver Shops
	4	Box	60,000	Denver Shops
Colo. S. & C. C.....	8	Box	60,000	Amer. C. & F. Co.
	1	Flat	60,000	Amer. C. & F. Co.
Columbia & P. S.....	36	Box	60,000	Company Shops
Corbett-Floesch Co.....	20	Ht. Cv.	80,000	Domin'n C. & F. Co.
Dairy Ship. Desp.....	150	Refrig.	60,000	Ryan Car Co.
Danville & West.....	50	Box	60,000	Lenoir Car Works
	10	Vt. Bx.	60,000	Lenoir Car Works
M. P. & J. T. Davis....	2	Flat	60,000	Canada Car Co.
Del. & Hudson.....	†15	Cab.		Company Shops
D. L. & W.....	*300	Hopper	80,000	Amer. C. & F. Co.
	†100	Refrig.	60,000	Amer. C. & F. Co.
	500	Box		Amer. C. & F. Co.
	†300	Hopper	80,000	Amer. C. & F. Co.
	*25	Flat	60,000	Amer. C. & F. Co.
	*800	Summers	100,000	Standard Steel
	10	Flat	80,000	Company Shops
	2	Flat	60,000	Company Shops
East. Brit. Col.....	10	Box	100,000	Haskell & Barker
	10	Flat	100,000	Haskell & Barker
Eastman-Gardiner	10	Logging	50,000	Company Shops
	1	Cab.		Company Shops
E. Tenn. & W. No. Caro- lina	25	Hopper	60,000	Company Shops
Escanaba & L. Sup.....	26	Flat	80,000	Fitz-Hugh Luther
Fajardo Dev. Co.....	†25	Cane	30,000	Gregg Co.
Ft. Worth & D. C.....	4	Box	60,000	Company Shops
Galv. Har. & S. A.....	†500	Box	100,000	Amer. C. & F. Co.
	†200	Flat	100,000	Amer. C. & F. Co.
	†200	Stock	80,000	Standard Steel
	200	Flat	60,000	Hicks L. & C. Wks.
	150	Box	60,000	Hicks L. & C. Wks.
	*100	Tank	8,000g.	Company Shops
German-Am. Car Lns....	†4	Cab		Standard Steel
Gila V. G. & Nor.....	†6	Logging	60,000	Beaumont
Gilmer Co.....	†77	Box	100,000	Amer. C. & F. Co.
Grand Rap. & Ind.....	*1,000	Gndla.	100,000	Pressed Steel
Grand Trunk	2,200	Box	60,000	Canada Car Co.
Grand Trunk Pac.....	100	Stock	undec'd.	Canada Car Co.
	50	Refrig.	undec'd.	Canada Car Co.
	50	Caboose		Canada Car Co.
	500	Box	60,000	Rhodes Curry
	5	Flat		Mt. Vernon
Grt. Cosmopol. Shw....	5	Logging	40,000	W. J. Oliver Mfg. Co.
H. W. Higbie Lbr. Co....	20	Flat	80,000	Youngstown
Hilo Ry (H. I.).....	10	Flat	60,000	Canada Car Co.
F. H. Hopkins & Co.....	†8	Refrig.	60,000	Amer. C. & F. Co.
Geo. A. Hormel Co.....	†300	Box	100,000	Amer. C. & F. Co.
Houston & Tex. C.....	*300	Gndla.	100,000	Cambria
	†300	Flat	100,000	Amer. C. & F. Co.
Houston E. & W. T.....	12	Refrig.	80,000	Haskell & Barker
Idaho & Wash. Nor....	*681	Gndla.	100,000	Cambria
Illinois Central.....	*400	Ht. Cv.	100,000	Rodger Ballast
	*85	Tank	60,000	German-American
	*52	Tank	60,000	Amer. C. & F. Co.
	*30	Tank	80,000	Amer. C. & F. Co.
Indian Refng. Co.....	*100	Otis	100,000	Domin'n C. & F. Co.
	100	Box	60,000	Rhodes Curry
	10	Refrig.	60,000	Rhodes Curry
	50	Box	60,000	Rathbun Co.
	50	Box	60,000	Crossen Car
	50	Box	60,000	Silliker Car Co.
	50	Box	60,000	Canada Car Co.
Inter. & Grt. Nor.....	500	Box	60,000	Amer. C. & F. Co.
Inverness Ry. & Co.....	50	Hopper		Rhodes Curry
Iowa Central.....	250	Gndla.	80,000	Mt. Vernon
	200	Box	60,000	Mt. Vernon
	*50	Dump	100,000	Pressed Steel
	12	Cab.		Mt. Vernon
Isth. Canal Com.....	*50	Dump	6 cu. yd.	W. J. Oliver Mfg. Co.
	*8	Flat	30,000	Youngstown
	*200	Dump	12 c. yds	West. Wheel Sepr.

* (asterisk) indicates steel cars.

† (dagger) indicates steel underframe cars.

Purchaser	No.	Kind	Capacity	Builder	Purchaser	No.	Kind	Capacity	Builder
1st. Canal Com.	*8	Flat	24,000	Wohman-Magor	Sandusky Port. Cement Co.	10	Rock	30,000	W. J. Oliver Mfg. Co.
Keeweenaw Cent.	*8	Dump	8,000	Wohman-Magor	Sierra Nev. Wood & Lumber Co.	6	Flat	40,000	Company Shops
H. Kelly & Co.	30	Hopper	60,000	Hicks L. & C. Wks.	Sonora Ry.	*40	Gndla.	100,000	Cambria
Kentwood & East.	†75	Cane	40,000	Middletown	Southern Pacific.	†4	Cab.	...	Standard Steel
Lackawanna Stl. Co.	40	Flat	80,000	Amer. C. & F. Co.	Span. Am. Iron Co.	†500	Box	100,000	Amer. C. & F. Co.
LaSalle Equip. Co.	24	Flat	60,000	Georgia Car Co.	Spokane Internat.	†150	Ballast	100,000	Amer. C. & F. Co.
Lehigh & Hud. R.	*150	Hopper	100,000	Ralston	Sterling Coal Co.	*25	Gndla.	100,000	Cambria
Lehigh & N. E.	*2	Tank	80,000	Erie Car Works	Tem. & Nor. Ont.	†100	Ore	100,000	Maryland Steel Co.
Lemac Car. Co.	12	Cab.	...	South Baltimore	Texas City Ref. Co.	†2	Hopper	80,000	Middletown
La. Central.	*300	Gndla.	40,000	Cambria	Tex. Southeastern.	†50	Box	80,000	Domin'n C. & F. Co.
La. Pacific.	†300	Box	30,000	Amer. C. & F. Co.	Thompson Bros. Co.	17	at. Cv.	80,000	Domin'n C. & F. Co.
L. & N.	50	Piry	60,000	Ryan Car Co.	Tombigbee Valley.	*60	Tank	10,000g.	Amer. C. & F. Co.
Lucius Co.	†15	Logging	60,000	Beaumont	Union Pacific.	10	Box	60,000	Amer. C. & F. Co.
Maine Central.	*200	Logging	80,000	Beaumont	U. S. Government.	5	Flat	60,000	Georgia Car Co.
Mather Stock Car.	500	Gndla.	80,000	Company Shops	Van Amburg Show Co.	†40	Logging	60,000	Beaumont
J. D. McArthur Co.	100	Box	65,000	Company Shops	Vandalia R. R.	†4	Board'g	60,000	Beaumont
Midland Terminal.	100	Coke	80,000	Company Shops	Virginia-Carolina.	17	Flat	50,000	Georgia Car Co.
Midland Valley.	1	Flat	100,000	Youngstown	Virginian Railway.	†450	Box	100,000	Amer. C. & F. Co.
Minudie Coal Co.	*50	Dump	100,000	Pressed Steel	Wash. & Vandemere.	*120	Hopr.	100,000	Cambria
Mo. & North Ark.	†6	Cab.	...	Standard Steel	West. Heat. Desp.	†50	Fnture	60,000	Standard Steel
Mo. Pacific.	100	Stock	60,000	Standard Steel	Western Maryland.	†50	Stock	80,000	Standard Steel
Monongahela Con.	100	Flat	60,000	Hicks L. & C. Wks.	Western of Havana.	2	Box	50,000	Youngstown
Morris & Co.	50	Ht. Cv.	80,000	Domin'n C. & F. Co.	Westmoreland Coal.	*1	Flat	160,000	Youngstown
Nash. Chat. & St. L.	4	Box	60,000	Amer. C. & F. Co.	J. G. White & Co.	1	Flat	60,000	Youngstown
National Car Lines.	500	Coal	80,000	Mt. Vernon	Ernst Wiener Co.	3	Stock	80,000	South Atlantic
Nev.-Cal.-Ore. Ry.	200	Box	60,000	Mt. Vernon	C. F. Wigand.	†171	Box	100,000	Amer. C. & F. Co.
Nev. Cons.-Cop. Co.	7	Hopper	30,000	Rhodes Curry	Willard Kitchen Co.	4	Flat	60,000	Amer. C. & F. Co.
Nevada Northern.	1	Flat	60,000	Rhodes Curry	Winifrede R. R.	*1,500	Gondola	100,000	Pressed Steel
Newburgh & So. Shore.	5	Cab.	...	Amer. C. & F. Co.	Wis. Central.	†12	Caboose	...	Amer. C. & F. Co.
New Orleans Gt. Nor.	124	Box	80,000	Mt. Vernon	Woodward Iron Co.	100	Vt. Bx.	60,000	South Baltimore
N. Y. C. & St. L.	5	Coke	60,000	Company Shops	Amer. Locomotive Co.	200	Refrig.	60,000	Haskell & Barker
N. Y. N. H. & H.	3	Gndla.	50,000	Company Shops	Ala. Great Southern.	*500	Hopr.	100,000	Cambria
N. Y. Ont. & W.	2	Refrig.	60,000	Haskell & Barker	Apalachicola Northern.	12	Cab.	...	South Baltimore
Northern Pacific.	200	Hopper	80,000	Amer. C. & F. Co.	Ark. Okla. & Western.	†1	Gndla.	80,000	Company Shops
No.-Western Pac.	†100	Box	80,000	Amer. C. & F. Co.	Atchison, Top. & S. F.	1	Cab.	...	Company Shops
Ont. Powder Co.	*30	Tank	80,000	Bettendorf	Atlanta & St. Andrews B.	†40	Box	30,000	Metropolitan Amalg.
Oregon & Cal.	*10	Tank	60,000	Bettendorf	Beaumont & Gt. North'n	*20	Flat	30,000	Metropolitan Amalg.
Oregon & Wash.	8	Box	40,000	Company Shops	Bel. Bay & B. Col.	*60	Coal	100,000	Cambria
Ore. R. R. & Nav.	4	Flat	40,000	Company Shops	Bessemer & Lake Erie.	†16	Gndla.	60,000	Middletown
Pac. Port. Cement Co.	†20	Dump	50,000	W. J. Oliver Mfg. Co.	Boston & Maine.	†30	Box	60,000	Middletown
Panama R. R.	*100	Hopr.	100,000	Pressed Steel	Buffalo, Roch. & Pitts.	†15	Cane	40,000	Ralston
Patton & Gibson Co.	†25	Box	100,000	Pressed Steel	Cadiz Ry.	*1	Tank	80,000	Erie Car Works
Pawne Co.	*200	Gndla.	100,000	Pressed Steel	Canadian Northern.	2	Flat	80,000	Rhodes Curry
Peach River Lines.	*50	Gen. Ser.	100,000	Pressed Steel	Canadian Pacific.	*5	Dump	12,000	Arthur Koppel Co.
Pest Bros. Mfg. Co.	300	Box	60,000	Western St. C. & F.	Central of Georgia.	1,000	Box	60,000	Haskell & Barker
City of Phila.	65	Stock	60,000	Western St. C. & F.	Central R. R. of N. J.	500	Box	80,000	Haskell & Barker
Philippine Rys.	†200	Flat	80,000	Western St. C. & F.	Chicago, Bur. & Quincy.	500	Flat	80,000	Haskell & Barker
Phoenix & Eastern.	†200	Gndla.	80,000	Haskell & Barker	Chicago & North Western.	250	Fnture	80,000	Haskell & Barker
Pittsburg & L. E.	500	Gndla.	80,000	Haskell & Barker		200	Veg. & B.	60,000	Haskell & Barker
Prairie Pebble Phosp. Co.	†600	Box	60,000	Keith C. & Mfg. Co.		100	Refrig.	60,000	Haskell & Barker
Procter & Gamb. Co.	†75	Gndla.	60,000	Company Shops		50	Stock	60,000	Haskell & Barker
Profit Island Gravel & Sand Co.	614	Gndla.	60,000	Company Shops		50	Cab.	...	Haskell & Barker
Quebec Central.	†14	Cab.	...	Company Shops		*40	Hopr.	100,000	Pressed Steel
S. & M. Ry.	2	Flat	60,000	Company Shops		*10	Ore	40,000	Pressed Steel
Sabine R. R.	1	Stock	60,000	Company Shops					
St. L. Browns. & Mex.	500	Refrig.	50,000	Amer. C. & F. Co.					
St. L. Southwestern.	300	Ht. Cv.	100,000	Rodger Ballast					
St. Paul & Des M.	700	Box	80,000	Company Shops					
San Ant. & Ar. Pass.	500	Stock	50,000	Company Shops					
	†4	Cab.	...	Standard Steel					
	1	Flat	60,000	Rhodes Curry					
	†200	Box	100,000	Amer. C. & F. Co.					
	†50	Flat	100,000	Amer. C. & F. Co.					
	†10	Cab.	...	Standard Steel					
	†500	Box	100,000	Amer. C. & F. Co.					
	†250	Flat	100,000	Amer. C. & F. Co.					
	†100	Ballast	100,000	Amer. C. & F. Co.					
	†100	Stock	80,000	Standard Steel					
	†15	Cab.	...	Standard Steel					
	*100	Gndla.	100,000	Cambria					
	*50	Hopr.	100,000	Cambria					
	†1,500	Box	100,000	Amer. C. & F. Co.					
	†50	Flat	100,000	Amer. C. & F. Co.					
	†100	Stock	80,000	Standard Steel					
	†10	Cab.	...	Standard Steel					
	*4	Gndla.	100,000	Cambria					
	300	Box	60,000	Amer. C. & F. Co.					
	100	Ballast	80,000	Amer. C. & F. Co.					
	2	Dump	6 cu. yd.	W. J. Oliver Mfg. Co.					
	†25	Logging	60,000	Beaumont					
	†20	Logging	60,000	Beaumont					
	*4	Tank	8,000g.	Bettendorf					
	3	Coke	60,000	Youngstown					
	12	Ht. Cv.	60,000	Rodger Ballast					
	†2	Cab.	...	Standard Steel					
	*500	Coal	100,000	Amer. C. & F. Co.					
	*1,000	Coke	100,000	Amer. C. & F. Co.					
	15	Dump	40,000	Company Shops					
	6	Flat	40,000	Company Shops					
	*100	Tank	8,000g.	German-American					
	†1	Gndla.	100,000	Ralston					
	50	Box	60,000	Company Shops					
	*10	Gndla.	40,000	Youngstown					
	†6	Tank	60,000	Beaumont					
	30	Ht. Cv.	80,000	Rodger Ballast					
	*15	Tank	80,000	Amer. C. & F. Co.					
	36	Box	60,000	Pine Bluff Shops					
	17	Cab.	...	Pine Bluff Shops					
	1	Flat	60,000	Pine Bluff Shops					
	1	Boardg.	...	Pine Bluff Shops					
	125	Box	80,000	Amer. C. & F. Co.					
	*50	Coal	100,000	Amer. C. & F. Co.					
	500	Vt. Bx.	60,000	Amer. C. & F. Co.					
	200	Stock	60,000	Amer. C. & F. Co.					

*(asterisk) indicates steel cars.
†(dagger) indicates steel underframe cars.

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Purchaser.	No.	Kind.	Builder.
Chicago & North Western...	10	Mail & bagg.	Pullman
	10	Baggage	Pullman
	4	Parlor	Pullman
	2	Observation	Pullman
	2	Bagg. & buffet	Pullman
	1	Dining	Pullman
Chicago, Mil. & St. Paul.	15	Coach	Barney & Smith
	4	Sleeping	Barney & Smith
	3	Dining	Pullman
	10	Mail & baggage	Company Shops
	8	Baggage	Company Shops
	1	Dining	Pullman
C. St. P., M. & O.	2	Cafe	Barney & Smith
Cin., Ham. & Dayton...	1	Bag. mail & exp.	Amer. C. & F. Co.
Cin., New Orleans & T. P.	1	Cafe	Barney & Smith
Clev., Cin., Chic. & St. L.	1	Mail & bagg.	Company shops
	1	Mail & bagg.	Company Shops
Coal & Coke	1	Dining	Pullman
Colorado & Southern	3	Coach	Harlan & Hollgswrth.
Columbia & Puget Sound.	1	Pass. & bagg.	Harlan & Hollgswrth.
	1	Observation	Pullman
Copper Queen Cons. Min.	15	Suburban	Barney & Smith
Delaware, Lack. & W'n.	6	Coach	Barney & Smith
	5	Pass. & bagg.	Barney & Smith
	10	Milk	Company Shops
Duluth, Miss. & North'n.	4	2d class coach	Amer. C. & F. Co.
	2	1st class coach	Amer. C. & F. Co.
	2	Combination	Amer. C. & F. Co.
	2	Bagg. & exp.	Amer. C. & F. Co.
Duluth, S. S. & Atlantic.	3	2d class coach	Barney & Smith
	1	1st class coach	Barney & Smith
	1	Baggage	Barney & Smith
Eastern British Columbia	1	1st class coach	Wason Mfg. Co.
	1	2d class coach	Wason Mfg. Co.
	1	Bagg. & exp.	Wason Mfg. Co.
Erie	10	Pass. and bagg.	Kent Shops
Ft. Worth & Denver City.	3	Dining	Pullman
Galv. Har. & San Antonio	1	Baggage & mail	Pullman
Georgia & Florida	4	Coach	Hicks L. & C. Works
	1	Pass. & bagg.	Hicks L. & C. Works
	1	Pass. bag. & mail	Hicks L. & C. Works
	1	Baggage & mail	Pullman
Gila Val. Globe & Nor.	10	Baggage	
Grand Trunk	5	1st class coach	
Grand Trunk Pac.	24	Baggage	Rhodes Curry
	18	1st class coach	Canada Car Co.
	12	Pass. and bagg.	Canada Car Co.
	10	2nd class coach	Canada Car Co.
	6	Pass. and bagg.	Canada Car Co.
	6	Mail and exp.	Canada Car Co.
	5	Tourist	Canada Car Co.
	5	Colonist	Canada Car Co.
	6	Sleeping	Barney & Smith
Green Bay & Western	3	Coach	Hicks L. & C. Works
Groveton, Lufkin & Nor.	1	Coach	Hicks L. & C. Works
	1	Combination	Hicks L. & C. Works
Houston & Tex. Central.	7	Coach	Pullman
	2	Baggage & mail	Pullman
Hou's East & West Tex.	3	Coach	Pullman
Idaho & Wash North'n.	3	Coach	Pullman
	11	Bagg. & exp.	Pullman
Illinois Central	14	Coach	Pullman
	5	Chair	Pullman
	8	Mail apartment	Company Shops
Intercolonial	2	Postal	Company Shops
	2	2d class sleep.	Rhodes Curry
	3	2d class sleep.	Crossen Car
	3	2d class sleep.	Silliker Car Co.
	1	Baggage	Preston Car & Coach
	2	Coach	Company Shops
	1	Coach	Hicks L. & C. Works
Internat'l & Gt. North'n.	1	Combination	Hicks
Island Creek	1	Coach	Pullman
Kanawha Glen Jean & E.	1	Coach	Pullman
Keeweenaw Central	1	Smok. bag. & exp.	Pullman
	1	Gasolene motor	Sheffield Car Co.
Kentwood & Eastern	1	Business	Company Shops
Lehigh & New England	2	Gasoline motor	McKeen Motor Car
Los. Ang. & San Diego Bch.	3	Coach	Pullman
Louisiana Western	2	Baggage	Company Shops
Louisville & Nashville	2	Bagg. & mail	Laconia Car Co.
Maine Central	3	1st class saloon	Wason Mfg. Co.
Mexican Southern	2	Mail & bagg.	Wason Mfg. Co.
Minneapolis & St. Louis	2	Mail & bagg.	Amer. C. & F. Co.
Mississippi Central	1	Gasolene motor	Fairbanks Morse
Missouri & North Ark.	2	Mail & pass.	Amer. C. & F. Co.
	2	Baggage	Amer. C. & F. Co.
Missouri, Kan. & Texas	10	Coach	Amer. C. & F. Co.
	10	Chair	Amer. C. & F. Co.
	7	Baggage	Amer. C. & F. Co.
	2	Pass. & bagg.	Amer. C. & F. Co.
	2	Coach	Barney & Smith
	1	Bagg. & mail	Barney & Smith
Missouri, Okla. & Gulf	5	Coach	Harlan & Hollgswrth.
Mobile, Jackson & K. C.	2	Bagg. & mail	Company Shops
Nash., Chat. & St. Louis	1	Postal	Company Shops
	1	Baggage	Company Shops
N. Y. C. & H. R.	24	Milk	Company Shops
N. Y., N. H. & H.	4	Motor (mul. unit)	Standard Steel
	6	Trailer	Standard Steel
	30	Non-vest. coach	Osgood Bradley
	25	Vest. coach	Osgood Bradley
	20	Bagg. & smok.	Osgood Bradley
	10	Non-vest. smok.	Osgood Bradley
	5	Vest. smok.	Osgood Bradley
	5	Horse & carr'ge	Osgood Bradley
	2	Bagg. & pass.	Osgood Bradley
	2	Mail & bagg.	Osgood Bradley
	1	Comb. Postal	Osgood Bradley
N. Y., Ont. & Western	9	Coach	Pullman
	1	Chair	Pullman
	2	Baggage	Harlan & Hollgswrth.
	2	Bagg. & mail	Company Shops

* (asterisk) indicates steel cars.

† (dagger) indicates steel underframe cars.

Purchaser.	No.	Kind.	Builder.
Northern Pacific	27	Coach	Barney & Smith
	20	Pass. & smok.	Barney & Smith
	10	Bagg. & exp.	Barney & Smith
	3	Mail & exp.	Barney & Smith
	3	Parlor	Barney & Smith
	14	Bagg. & exp.	Amer. C. & F. Co.
	8	Mail & bagg.	Amer. C. & F. Co.
	8	Pass. & bagg.	Amer. C. & F. Co.
Ocean Shore	1	Coach	Hicks L. & C. Works
Oregon & California	5	Coach	Pullman
	2	Baggage	Pullman
	2	Dining	Pullman
Oregon R. R. & Nav. Co.	6	Coach	Pullman
	2	Baggage	Pullman
	3	Dining	Pullman
Oregon Short Line	3	Baggage	Pullman
	3	Dining	Pullman
Pennsylvania	24	Pass. & bagg.	Pressed Steel
	4	Baggage	Pressed Steel
	3	Bagg. & mail	Pressed Steel
	23	Coach	Amer. C. & F. Co.
	6	Baggage	Amer. C. & F. Co.
	17	Coach	Standard Steel
	2	Bagg. & mail	Pullman
	1	Baggage	Company Shops
	1	Gasoline motor	McKeen Motor Car
Phoenix & Eastern	2	Postal	Richmond Shops
Pittsburg & Lake Erie	1	Coach	Ralston
Pitts.-Silv. Pk. Gold Mng.	1	Pass. & bagg.	Ralston
Rich., Fred. & Potomac	2	Milk	Pullman
Roscoe, Snyder & Pacific	1	Baggage	Pullman
Rutland R. R.	1	Baggage	Pullman
St. Louis Southwestern	10	Baggage	Amer. C. & F. Co.
	10	Coach	Amer. C. & F. Co.
	15	Mail & exp.	Amer. C. & F. Co.
	3	Parlor	Amer. C. & F. Co.
	1	Pass. & bagg.	Amer. C. & F. Co.
Salt Lake & Mercur	1	Gasoline mtr. car	McKeen Motor Car
San Diego Cuy & East	2	Bagg. & mail	Pullman
Sonora Ry.	35	Baggage	Pullman
Southern Pacific	30	Coach	Pullman
	17	Gasoline motor	McKeen Motor Car
	10	Trailers	McKeen Motor Car
	6	Coach	Pullman
	5	Mail and exp.	Pullman
	5	Pass. and smok.	Pullman
	5	Bagg. and smok.	Pullman
	3	Dining	Pullman
	2	Buffet	Pullman
	3	Sleeper	Pullman
Temiskam. & Nor. Ont.	2	Bagg. & exp.	Preston Car & Coach
	2	Mail & exp.	Preston Car & Coach
Texas & New Orleans	1	Bagg. & mail	Pullman
Texas Southeastern	1	Pass. & bagg.	South'n Iron & Equip.
Tombigbee Valley	2	Combination	Georgia Car Co.
Union Pacific	10	Chair	Pullman
	10	Baggage	Pullman
	5	Postal	Pullman
	5	Postal storage	Pullman
	3	Dining	Pullman
	3	Gasoline motor	McKeen Motor Car
Virginia-Carolina	1	Combination	Georgia Car Co.
Virginian Ry.	8	Coaches	Barney & Smith
	4	Parlor café	Barney & Smith
	4	Mail and bagg.	Barney & Smith
	2	Baggage	Barney & Smith
Waterloo, Cedar F. & N.	25	Coach	McGuire-Cummings
Western Alleghany	2	Coach	Hicks L. & C. Works
Wisconsin & Northern	1	Coach	Barney & Smith
	1	Pass. & bagg.	Barney & Smith

* (asterisk) indicates steel cars.

† (dagger) indicates steel underframe cars.

LOCOMOTIVE EQUIPMENT ORDERED IN 1908.

Purchaser.	No.	Cylinders.	Weight.	Type.	Builder.
Adiron. & St. Law.	1	15x20	62,000		Baldwin
Andrews Steel Co.	1	15x20	215,000	2-8-0	Davenport
Ann Arbor	9	22x30		0-4-2	American
Archibald Cl. Co.	1			4-6-0	Davenport
Ark. Okla. & W.	1	18x24	110,000	4-6-0	Baldwin
	1	15x20	76,000	2-8-0	Lima
Atl. Birm. & A.	1	18x24	73,000	4-4-0	Baldwin
Baker Lbr. Co.	1		46,000	Geared	Helsler
Bak. Wakiel. Cyp.	1				Davenport
Beau. & Gt. Nor.	1	18x24	110,000	4-6-0	Baldwin
Beau.-Sar. Transp. Co.	1	17x24	80,000	2-6-0	Baldwin
Bess. & L. E.	15	22x28	184,000	2-8-0	American
	2	20x26	146,500	4-4-0	American
	4	22x28	180,000	0-6-0	Baldwin
	2	24x32	250,400	2-8-0	Baldwin
Birm. Southern	3	22x28	199,000	2-8-0	American
Boston & Albany	8	21x28	163,000	0-6-0	American
	20	23x32	236,000	2-8-0	American
	12	22x26	234,000	4-6-2	American
Butler County	1	18x24	107,000	2-6-0	Baldwin
Canadian Pac.	20	22½x28	190,000	4-6-0	Loco. & Mach.
	10	22½x28	192,000	2-8-0	Loco. & Mach.
	10	21x28	190,000	4-6-0	Angus Shops
	10	21x28	192,000	2-8-0	Angus Shops
	2	22½x28	109,000	0-6-0	Angus Shops
	1	21x28	214,000	4-6-2	Angus Shops
	1	22x33x26	240,000	0-6-6-0	Angus Shops
Caro. Clin. & O.	15	22x32	206,000	2-8-0	Baldwin
	4	20x26	165,000	4-6-0	Baldwin
	1	21½x33	363,000	2-6-6-2	Baldwin
	2	26x40x30	430,000	Mallet	Baldwin
Central Pacific	1		62,000	Geared	Helsler
Champ. Fibre Co.	10	22x30	224,000	2-8-0	American
Chicago & Alton	5	23x28	250,200	4-6-2	American
	5	20x26	144,000	0-6-0	American
	5	23x28	243,000	4-6-2	Baldwin
Chicago & Ill. Westn.	1			0-6-0	American

* (asterisk) indicates compound.

Purchaser.	No. Cylinder.	Weight.	Type.	Builder.	Purchaser.	No. Cylinder.	Weight.	Type.	Builder.
Chicago & N. W.	25 21x26	162,500	4-6-0	American	Philippine Rys.	2	75,000	.....	Baldwin
Chicago B. & Q.	15 18x24	121,000	0-6-0	American	Pick. Mather & Co. ...	4	.....	.....	Baldwin
Chic. Cln. & Lou.	15 20x26	158,000	4-4-2	American	Pittsburg Coal Co. ...	1 14x24	70,000	0-4-0	Baldwin
Chicago Junction.	*3 21½x33x32	355,000	2-6-6-2	Baldwin	Pittsburg & L. E.	5 22x26	.....	4-6-0	American
C. M. & St. P.	5 22x28	268,000	2-8-0	Baldwin	Pitts. Shaw & Nor. ...	6 22x28	196,000	2-8-0	Baldwin
	1 20x26	142,500	0-6-0	American	Porto Rico Rys.	1	.....	.....	Baldwin
	75 21x28	206,000	2-6-2	American	Prairie & Kings.	2	40,000	Electric.	Baldwin
	13 20½x26	178,000	4-6-0	American	Quebec Central.	2 20x26	144,000	2-6-0	Canadian L.
	*12 15x25x28	202,000	4-4-2	Baldwin	Roscoe, Sny. & Pac. ...	1	.....	.....	Baldwin
	70 21x28	206,000	2-6-2	Co. Shops	St. Clair Tunnel Co. ...	1	.....	Electric.	Westinghouse
	30 19x26	127,000	0-6-0	Co. Shops	St. Johns Riv. Term. ...	1 19x24	127,600	0-6-0	Baldwin
	20 24x30	261,000	2-8-2	Co. Shops	St. L. Nat'l Stock Yd. ...	1	.....	.....	American
	*4 15x25x28	202,000	4-4-2	Co. Shops	St. L. Southwestern. ...	10 22x30	124,000	0-6-0	American
Chicago Peo. & St. L. ...	3 20x26	165,000	2-8-0	American		10 20x28	160,000	2-6-0	Baldwin
Chicago River & Ind. ...	2 20x26	142,500	0-6-0	American		6 20x26	168,000	4-4-2	Baldwin
Chic. R. I. & Pac.	35 23x28	217,000	4-6-2	American		5 19x26	155,000	2-6-0	Baldwin
C. St. P. M. & O.	5 21x26	167,400	4-6-0	American	San Ant. & Ar. Pass. ...	3 18x24	100,000	4-4-0	Baldwin
	4 21x28	189,700	4-6-2	American		1 18x26	142,000	4-6-0	Baldwin
	3 18x24	121,000	0-6-0	American	Shreveport H. & G. ...	1 15x22	79,450	2-6-0	Baldwin
Cln. Ham. & Dayton. ...	10 19x26	132,000	0-6-0	American	So. Pine Timber Co. ...	1	60,000	Geared.	Heisler
Colo. Utah Con. Co. ...	4	.....	.....	American	Span. Am. Iron Co. ...	2 18x24	100,000	0-6-0	Baldwin
Cuban Am. Sug. Co. ...	1	.....	.....	Baldwin		2 9x14	20,000	0-4-0	Baldwin
Cumner Lumber Co. ...	1 8x14	.....	Switch.	Porter	Tionesta Valley.	2	.....	Climax	Climax
Del. Lack & Western. ...	20 19x24	129,843	0-6-0	American	Trexly Rush Co.	1	74,000	Geared.	Heisler
	14 21x26	178,000	2-8-0	American					
	8 22½x26	214,000	4-6-0	American	Union R. R.	6 20x26	149,000	0-6-0	American
	5 20½x26	161,000	2-6-0	American		4 24x32	250,300	2-8-0	Baldwin
	2 21x26	176,000	2-6-0	American	Virginia Carolina ...	1 18x24	109,000	2-8-0	Baldwin
Denver N. W. & Pac. ...	4 22x28	218,000	2-8-0	American	Virginian Ry.	12 24x32	269,000	2-4-2	Baldwin
	*1 20½x33x32	335,000	Mallet.	American		*4 22x34x30	325,000	2-6-6-0	American
Denv. & Rio Grande. ...	30	.....	.....	American		3 22x28	185,000	0-8-0	American
Dixie Route.	1 16x24	50,000	4-6-0	Baldwin		1 20x24	136,000	2-8-0	American
Dominion Coal Co. ...	1 19x26	122,000	0-6-0	Montreal	Western Maryland. ...	10 22x30	200,000	2-8-0	Baldwin
Dugas & LeBlanc.	1 7x12	24,000	Forney.	Porter		3 21x26	140,000	Switch.	Baldwin
Duluth & Iron R.	4 22x28	194,000	2-8-0	Baldwin	Western of Havana. ...	1 17x24	96,606	4-4-0	Baldwin
East. & West. Lbr. Co. ...	2	.....	.....	Montreal		1 20x24	124,000	0-8-0	Baldwin
East. British Col.	2 20x28	184,000	2-8-0	American	West. Wash. Log. Co. ...	2 15x22	86,000	2-6-2	Baldwin
E. Jordan & Southern. ...	1 18x24	115,000	2-6-0	Baldwin	Wharton Steel Co.	1	.....	.....	Baldwin
Eastman-Gardiner Co. ...	1 20x26	153,000	4-6-0	Davenport	Winton-Dear Co.	4 11x16	.....	.....	Porter
El Paso Suburban.	1	.....	.....	Baldwin	Woodville Lmbr. Co. ...	1	78,000	Geared.	Heisler
Erie.	15 22½x26	235,150	4-6-2	American	Woodward Iron Co. ...	1 16x24	111,000	2-6-2	Baldwin
Fajardo Dev. Co.	1 15x18	37,000	2-8-0	American	Yellowstone Park.	1 15x18	127,000	Shay.	Lima
Ft. W. & Den. City. ...	5 22x28	195,500	2-8-0	American					
	5 19x26	138,450	0-6-0	American					
	3 20x28	181,300	2-8-0	American					
Fost. & Nor. Trsp. Co. ...	1	60,000	Climax.	Climax					
Georgia & Florida. ...	2 19x26	151,000	Frt.	Baldwin					
Gideon & No. Island. ...	1 13x18	60,000	.....	Davenport					
	1 11x16	40,000	.....	Davenport					
Grand Rap. & Ind.	4 21x28	178,700	2-8-0	American					
Grand Trunk Pacific. ...	25 20x26	162,000	2-6-0	Canadian L.					
Green Bay & West.	1 19x26	133,000	2-6-0	American					
Idaho & Wash. Nor. ...	1 19x26	144,000	4-6-0	Baldwin					
Intercolonial.	32 21x28	165,800	2-8-0	Canadian L.					
	3 18x26	123,000	Switch.	Loco. & Mach.					
Inter. & Grt. Nor.	10 21x28	198,560	4-6-2	American					
Iowa Central.	10 20x28	168,700	4-6-0	Baldwin					
	6 20x28	150,000	2-6-0	Baldwin					
	2 20x26	144,000	2-6-0	Baldwin					
G. W. Irwin & Co.	1 12x16	51,000	0-6-2	Porter					
Isth. Canal Com.	10 15x20	80,000	0-6-0	Vul. Iron Wks.					
	2 10x16	3,600	0-4-0	Baldwin					
Keeweenaw Central. ...	1 19x26	121,100	2-6-0	Baldwin					
Kentwood & East.	1 19x26	135,000	4-6-0	American					
Krajewski-Pesant.	1 12x16	43,000	2-6-0	Baldwin					
Lebanon Mill & Lbr. ...	1	44,000	Geared.	Heisler					
Lehigh Coal & Nav. ...	2 22x28	194,110	2-8-0	Baldwin					
Lehigh & Hud. River. ...	12 22x28	180,000	2-8-0	Baldwin					
Lehigh & New Eng.	3 20x26	153,000	2-8-0	Baldwin					
A. G. Little.	2	78,000	Geared.	Heisler					
	1	62,000	Geared.	Heisler					
	1	44,000	Geared.	Heisler					
Louis. & Nash.	6 21x28	177,000	2-8-0	Co. Shops					
	6 20x28	183,000	4-6-2	Co. Shops					
Lynden Lumber Co. ...	1	84,000	Geared.	Heisler					
C. C. Margoll & Bro. ...	1	56,000	Geared.	Heisler					
Menom. Bay S. L. Co. ...	1 17x22	129,000	2-6-0	American					
Mexican Central.	*1 21½x33x32	338,000	2-6-6-2	Baldwin					
Mexican Southern. ...	1 17x20	89,600	2-8-0	Baldwin					
	1 16x20	86,000	4-6-0	American					
Michigan Central.	3 22x26	239,000	4-6-2	Montreal					
	2 22x26	239,000	4-6-2	American					
Miss. Central.	2 19x26	135,000	4-4-0	American					
	2	.....	.....	American					
Mo. Kan. & Tex.	16 20x28	168,500	4-6-0	American					
Mo. & North Ark.	2 18x24	115,000	4-4-0	Baldwin					
Mo. Okla. & Gulf.	1 18x24	120,000	4-6-0	Baldwin					
Nash. Chat. & St. L. ...	*3 16x27x26	181,400	4-6-0	Baldwin					
Nepigon Const'n Co. ...	1	.....	0-4-0	Davenport					
Nevada Northern.	3 21x30	191,000	2-8-0	American					
Newell & Bryant.	1 12x18	48,000	2-6-0	Baldwin					
N. Y. C. & H. R.	35 22x26	208,000	4-6-0	American					
	21 21x28	163,000	0-6-0	American					
	20 22x28	266,000	4-6-2	American					
	15 23x32	236,000	2-8-0	American					
	12 Electric	230,000	4-8-4	American					
N. Y. Chicago & St. L. ...	5 19x28	160,000	2-8-0	American					
	5 18x24	103,450	0-6-0	American					
	10 19x24	136,500	4-6-0	American					
N. Y. N. H. & H.	6	.....	Electric.	Westinghouse					
N. Y. Ont. & Western. ...	14 20x28	173,000	2-6-0	American					
	2 18x28	142,000	4-4-0	American					
Northern Pacific.	10 22x26	220,000	4-6-2	Baldwin					
	3 21x26	180,000	4-4-2	Baldwin					
O'Brien & Mullarky. ...	1 9x14	.....	.....	Porter					
Ocean Shore.	2 20x24	156,000	2-6-2	Baldwin					
Ozark Land & Lbr. ...	1 16x22	96,000	2-6-2	Baldwin					
Panama R. R.	12 20x26	147,500	2-6-0	American					
Pennsylvania.	8 18½x26	121,800	4-4-0	Altoona Shops					
	1 20½x26	164,900	4-4-2	Altoona Shops					
	1 22x26	168,600	4-4-2	Altoona Shops					
Pa. Salt Mfg. Co.	1 14x20	.....	0-4-0	Porter					
	1 16x24	.....	0-4-0	Porter					

*(asterisk) indicates compound.

DIVIDEND CHANGES AND NEW RAILWAY CAPITAL IN 1908.

In the accompanying tables showing dividend changes and new railway capital during 1908, the figures are as nearly accurate as it is possible to get them, but are not given as exact statements, since companies operating small roads may have made no statement of a dividend change and large roads may have made indefinite statements. This uncertainty is necessarily found also in the table showing the new securities issued or sold during the year. It is wholly impossible to give a detailed correct statement of the issue of new securities. For instance, a road may have sold a certain block of securities to its bankers, and announcement may have been made of this fact, and later the bankers may have showed a preference for some other security, more readily negotiable under the conditions prevailing at just that time, so that one set of securities would be substituted for another. Again, a road may have sold securities to its bankers and the bankers may have made no public offering, so that the transaction may not be made public until the publication of the annual report of the railway company. Even more difficult is the problem of getting accurate figures for the amount of refunding which has done. It is obvious that a road may have sold securities, put the money in the bank, and months later used it for refunding purposes, and there seems no way in which such a transaction would be likely to be made public.

However, the accompanying table, taken as a whole, does show the new capital invested in railways. Issues amounting to less than \$500,000 have been disregarded in compiling the table, and street and electric railways are not included. No attempt has been made to show the conversion of notes into bonds or bonds into stock; that is, a convertible issue is shown as if no one of the holders had desired to convert his holdings.

In the early part of the calendar year, owing to general business conditions, lack of confidence, bitter attacks on railways and financial credit, and uncertainty as to the power of politically appointed state commissions to confiscate railway property, only such companies as found it absolutely

Dividend Changes in 1908.

Name of company.	Amount paid in 1908.	Present annual rate.	Paid or declared.	Amount paid in 1907.
Alberta Ry. & Irrigation....	1	4	November	0
Atch., Top. & Santa Fe com.	5	5	June 1	6
At. Cst Line of Conn. stock.	8	8	March	10
Atlantic Coast Line com.....	5 1/4 ¹	5	July	6
Boston & Maine com.....	6 1/2	6	September 3	7
Buff., Roch. & Pitts. com....	4 1/2	4	August 15	5 1/2
Chicago & Alton com.....	1	..	August 15	0
Do., cum. & part. prior lien	5 ²	4	August 15	4
Cleve., Cin., Chic. & St. L....	1	..	March	4
Cleve., Lorain & Wheeling....	2 1/2 ³	..	March	..
Colorado & Southern.....	2	2	November 13	0
Cornwall & Lebanon stock....	7	6	August 1	8
Detroit & Toledo Shore Line.	4	4	July	0
Erie,* 1st pf.	None	..	April	2
Do., 2d pf.	None	..	April	2
Grand Trunk, 1st and 2d pf.	2 1/2	..	April	5
Green Bay & West'n deb B....	1/2	1/2	February	0
Gulf & Ship Island.....	2	4	July ⁵	4
Huntingdon & Broad Top pf.	3 1/2	..	July	7
Keokuk & Des Moines pf....	1 1/4	..	August 1	0
Lake Erie & Western pf....	1	..	January	3
Lk. Sh. & Mich South. stock.	14 ⁶	12	January	12
Louisville & Nashville stock..	6 1/4 ⁷	5	August	6
Michigan Central.....	8 ⁸	6	January	6
Minn., St. P. & S. S. M. com	6	6	Apr. and Oct.	4
Missouri Pacific stock.....	2 1/2 ⁹	..	January	5
Nash., Chatt. & St. L. stock.	5 1/2	5	August	6
New Brunswick Railway....	..	..	June 30	4
N. Y. Cent. & H. R. stock....	5 1/4	5	Apr., Aug., Nov.	6
Norfolk & Western.....	4	4	June	5
N. Y., Chic. & St. L. 2d pf..	5	5	March	4
Northern Pacific com.....	18.26 ¹⁰	7	November	7
Oregon Ry. & Navigation....	79 ¹¹	4	February	4
Pennsylvania Company stock	6	6	June, Dec.	7
Pennsylvania stock.....	6	6	May, Nov.	7
Peoria & Bureau Valley R.R.	9 ¹²	8	February	8
Texas Central com.....	None	..	June	5
West Jersey & Seashore com	4	4	Mar., Sept.	6

¹ In January 3 per cent. was paid in A. C. L. 4 per cent. certificates of indebtedness, and in July 2 1/2 per cent. was paid in cash.

² An extra dividend of 1 per cent. was declared in August.

³ This is an initial dividend and no period for which it is declared is mentioned.

⁴ The New York Public Service Commission, Second District, denied the application to issue scrip due 1917 for the 2 per cent. dividend declared in October, 1907, on the first preferred stock, and the 2 per cent. declared on the 2d preferred stock to holders of record October 10, 1907, and 2 per cent. to holders on April 10, 1908.

⁵ In October the dividend was deferred.

⁶ Includes extra 2 per cent. dividend paid in January.

⁷ An extra dividend of 1 per cent., payable in the stock of the Louisville Property Co., a subsidiary, was declared in February.

⁸ Paid in stock.

⁹ The company, whose road is under lease by the Canadian Pacific, is said to have declared a reduced dividend, the rate not being made public.

¹⁰ An extra dividend of \$11.26 per share was declared from the earnings of the Northwestern Improvement Co., a subsidiary.

¹¹ An extra dividend of 75 per cent. was declared in February.

¹² An extra dividend of 1 per cent. was declared in February.

necessary, or had the very best of securities and credit, sold securities. The turning point came in April with the issue of \$40,000,000 consolidated mortgage 4 per cent. bonds by the Pennsylvania. The bonds were offered to the public by one of the strongest combinations of foreign and American banking houses that has ever underwritten American railway securities. The offering price was 96, and it is said that the bonds were more than 20 times over-subscribed. From April 1 the improvement in the bond market was steady,

but the investing public were discriminating. Only the very best of securities were readily salable, but these at prices that were attractive to the railways as compared with the prices they had obtained in the early half of 1908 and the last half of 1907.

The sale, by the Union Pacific, of \$50,000,000 first lien and refunding mortgage 4 per cent. bonds; by the Atchison, Topeka & Santa Fe of \$17,000,000 transcontinental short line first mortgage 4 per cent. bonds; and by the Illinois Central of \$20,000,000 refunding 4 per cent. bonds, shows the class of security that the railway companies offered. This was by the companies that had such securities to offer. The roads whose credit was not so good found it necessary, as in 1907, to issue short term notes at high rates of interest, generally redeemable at from par to 105, or convertible into bonds deposited as security.

The discrimination shown by the investing public, and the low rate of interest on call money showing the abundance of capital seeking investment, is one of the most encouraging features of the railway outlook. There will be very large capital requirements during the next year or two, and the possibility of securing this capital will depend largely on the ability of the railways to educate the people up to appreciate the benefits that will accrue, not only to railway security holders, but to the public in general, by the expenditure of this new capital.

The table showing dividend changes is remarkable only in that it conforms so closely with what might have been expected. Fifteen of the roads decreased their annual rate, and six others omitted or deferred dividend payments. The companies decreasing their annual rate included such standard railways as the Pennsylvania, New York Central & Hudson River and Louisville & Nashville. Of course in all of these cases the necessity for reduction in dividend rate was not compelling. The course pursued by the companies was one rather of conservatism than of necessity. The New York Central & Hudson River, however, not only reduced its dividend, but found it convenient to declare an extra dividend on its two subsidiaries, the Lake Shore & Michigan Southern and the Michigan Central, to enable it to pay its own reduced dividend. The extra dividend of 2 per cent. declared on the Michigan Central and the Lake Shore & Michigan Southern stock was paid only in the worst time of business depression, that is, in the first few months of the year, and the New York Central & Hudson River did not deem it necessary to have its subsidiaries make any extra dividend declaration in the last half of the year, the regular dividend having been declared on both the Lake Shore and the Michigan Central in the last dividend period of the year. The only important roads declaring an initial dividend were the Chicago & Alton and the Colorado & Southern.

NEW RAILWAY CAPITAL IN 1908.

Name of Road.	Kind of security.	Amount issued listed or sold during 1908.	Amount of refunding covered.	Issued, listed or sold.
Atchison, Topeka & Santa Fe.....	Transcontinental Short Line first mortgage, 4 per cent. bonds, 1908-1958.....	\$17,000,000	.....	August
" " ".....	General mortgage, 4 per cent. bonds of 1895-1905.....	5,521,000	.....	April
" " ".....	Eastern Oklahoma division, 1st mort. 4 per cent. bonds of 1903-1928.....	3,475,000	.....	April
Atlantic Coast Line.....	First mort. 4 per cent. bonds of 1903-1928. 4 per cent. certificates of indebtedness of 1902.....	3,603,000 2,378,872	.....	.....
Baltimore & Ohio.....	One year 5 per cent. notes.....	6,000,000	.....	February
" " ".....	Prior lien 3 1/2 per cent. bonds of 1898-1925. First mortgage 4 per cent. bonds of 1898-1948.....	2,003,000 4,014,000	.....	July July
" " ".....	Southwestern division 3 1/2 per cent. bonds of 1899-1925.....	1,406,000	.....	July
" " ".....	One year 5 per cent. notes.....	3,660,000	.....	March
Boston & Albany.....	Bonds (not mortgage) ¹ 4 per cent. of 1908-1933.....	7,000,000	.....	April
Boston & Lowell.....	One year 6 per cent. notes.....	900,000	.....	January
Boston & Maine.....	One year 6 per cent. notes ²	3,000,000	\$3,000,000	January
" " ".....	Six months' 3 1/2 per cent. notes.....	7,300,000	8,000,000	September
Buffalo, Rochester & Pittsburgh.....	Consolidated mortgage 4 1/2 per cent. bonds of 1907-1957.....	1,700,000	.....	February

Name of Road.	Kind of security.	Amount issued listed or sold during 1908.	Amount of refunding covered.	Issued, listed or sold.
Canada Southern	First mortgage 6 per cent. bonds of 1908-1913 ^a	\$14,000,000	\$14,000,000	April.
Canadian Pacific	Preferred stock	4,866,666	.....	.....
Carolina, Clinchfield & Ohio	First mortgage 5 per cent. bonds of 1908-1938	10,000,000	.....	August
Central Pacific	First refunding 4 per cent. guaranteed bonds of 1899-1949	2,500,000 18,085,000	..... .....	January July
Chesapeake & Ohio	First consolidated mortgage 5 per cent. bonds of 1889-1939	2,000,000	2,000,000	July
" "	6 per cent. notes of 1908-1910	2,500,000	1,200,000	April
Chicago & Alton	Equipment 4½ per cent. bonds due semi-annually	2,000,000	.....	November
Chicago & Eastern Illinois	Equipment trust 5 per cent., series G	2,232,000	.....	May
" "	Refunding and improvement 4 per cent. bonds of 1905-1955	1,210,000	.....	April
Chicago & Western Indiana	Consolidated mortgage 4 per cent. bonds of 1902-1952	1,219,000 12,271,000	..... 8,000,000	May December.
Chicago, Burlington & Quincy	General mortgage 4 per cent. bonds, 1908-1958	16,000,000	.....	June
Chicago, Cincinnati & Louisville	Receivers 6 per cent. certificates of 1908-1911	1,000,000	.....	May
Chicago, Indiana & Southern	Consolidated mortgage 4 per cent. bonds of 1906-1956	5,150,000	.....	April
Chicago, Joliet & Kansas City	5 per cent. bonds	15,000,000	.....	May
Chicago, Milwaukee & Gary	First mortgage 5 per cent. bonds of 1908-1948	5,500,000	.....	April
Chicago, Rock Island & Pacific	First and refunding mortgage 4 per cent. bonds of 1904-1934	13,116,000 ^a	8,116,000	October
" " " "	Collateral trust, 6 per cent., 1-year notes ^a	6,000,000	6,000,000	April
Chicago, St. Paul, Minneapolis & Omaha	Mortgage, 6 per cent. bonds of 1880-1930	992,000	.....	March
Chihuahua & Pacific	First mortgage, 5 per cent. bonds of 1905-1955	700,000	.....	.....
Cincinnati, Hamilton & Dayton	Purchase money, 4 per cent. notes, Jan. 1, 1908-July 1, 1913	11,558,000 ₆	11,558,000	.....
Cincinnati, New Orleans & Texas Pacific	5 per cent. cumulative preferred stock without voting power	500,000	.....	May
Cleveland & Pittsburgh	Special betterment stock, guaranteed 4 per cent.	529,450	.....	.....
Colorado & Southern	Refunding and extension 4½ per cent. mortgage bonds	3,429,246	150,000	October
Delaware & Hudson	First and refunding mortgage, 4 per cent. bonds, 1908-1943	13,309,000	.....	July
Denver & Rio Grande	Convertible 6 per cent. notes of 1908-1911, 1913	10,000,000	.....	August
" "	First consolidated, 4 per cent., mortgage bonds of 1899-1949	508,400	.....	.....
Denver Northwestern & Pacific	Terminal bonds	1,800,000 ⁷	.....	May
Erie	Collateral trust 6 per cent. bonds of 1908-1911	12,080,240	5,500,000	April ⁸
" "	General lien 4 per cent. bonds of 1895-1996	1,330,000	.....	.....
Fitchburg	Preferred 5 per cent. rental	700,000	.....	.....
" "	One year 6 per cent. notes	500,000	.....	January
" "	4½ per cent. bonds, not mortgage, of 1908-1928	2,400,000	2,000,000	April
Georgia Railway & Banking Co.	Debenture 4 per cent. bonds of 1907-1947	1,000,000	.....	July
Grand Trunk Pacific	Guaranteed 4 per cent. debenture stock	£1,000,000	.....	February
" "	Mortgage 4 per cent. bonds, Series B, of 1905-1955	£1,354,000	.....	March
" "	Mortgage 4 per cent. bonds, Series A	£454,000	.....	March
" "	Prairie Section of 1905-1955	£200,000	.....	March
" "	Lake Superior division 4 per cent. first mortgage bonds of 1905-1955	£1,000,000	.....	February
Grand Trunk	Guaranteed stock	£1,000,000	.....	.....
Great Northern	East. of Minn., North. Division, 4 per cent. bonds of 1898-1948	\$2,562,000	4,700,000	.....
Gulf & Ship Island	Mortgage 6 per cent. bonds of 1908-1909, 1911	1,000,000	.....	February
Illinois Central	Refunding 4 per cent. bonds of 1908-1958	20,000,000	.....	November
" "	Stock	14,256,000	.....	May
Iowa Central	Refunding mortgage 4 per cent. bonds of 1901-1951	750,000	.....	June
Kansas City, Fort Scott & Memphis	Kansas City, Fort Scott & Gulf, first mortgage 5 per cent. bonds of 1908-1911 ¹⁰	2,056,300	2,056,300	June
" " " "	Refunding mortgage 4 per cent. bonds of 1901-1936	1,400,000	.....	.....
Lehigh Valley	General consolidated mortgage 4 per cent. bonds of 1903-2003	1,000,000	.....	May
" "	Equip. trust 4½ per cent. bonds J. of 1907	4,500,000	.....	.....
" "	Lehigh & Lake Erie first mortgage 4½ per cent. bonds of 1907-1957	1,000,000	.....	.....
Little Miami	Special guaranteed betterment 4 per cent. stock	3,197,850	.....	.....
Louisville & Nashville	Unified mortgage 4 per cent. bonds of 1890-1940	3,914,000	.....	.....
Mexican Central	Priority 5 per cent. bonds of 1889-1939	2,111,000	.....	.....
Minneapolis, St. Paul & Sault Ste. Marie	First consolidated mortgage guaranteed 4 per cent. bonds of 1888-1938	1,680,000	.....	October
Missouri, Kansas & Texas	First and refunding mortgage 4 per cent. bonds of 1904-2004	818,000	.....	April
Missouri Pacific	Mortgage 4 per cent. bonds of 1905-1945	8,000,000	.....	May
" "	Collateral Trust convertible 6 per cent. notes of 1908-1910 ¹¹	6,000,000	6,000,000	February
" "	Kan. & Colo. Pac. first ref. mort. bonds of 1908-1938	7,794,000 ¹²	.....	.....
Mobile & Ohio	First mortgage 5 per cent. notes of 1908-1911	600,000	.....	February
National Railways of Mexico. ^{12a}	Prior lien, gold 4½ per cent. bonds of 1907-1957	16,000,000	.....	April
" " " "	Guaranteed general mortgage 4 per cent. bonds of 1907-1977	9,200,000	.....	April
New Orleans & Great Northern	First mortgage 5 per cent. bonds, 1905-1955	668,000	.....	.....

Name of Road.	Kind of security.	Amount issued listed or sold during 1908.	Amount of refunding covered.	Issued, listed or sold.
New York Central & Hudson River.....	4 per cent. debenture bonds of 1904-1934..	\$13,000,000		May
" " " ".....	Refunding (now first) mortgage, 3½ per cent. bonds of 1897-1907.....	4,000,000		April
New York, Chicago & St. Louis.....	4 per cent. debentures of 1906-1931.....	2,000,000		June
New York, New Haven & Hartford.....	Boston & New York Air Line, new mortgage, 4 per cent. bonds of 1905-1955.....	2,702,000		
" " " ".....	Harlem River & Portchester first mortgage 4 per cent. bonds of 1904-1954.....	3,942,000	8,341,000	May
" " " ".....	Refunding mortgage 4 per cent. bonds of New Haven & North Hampton of 1906-1956.....	2,176,000		
" " " ".....	3-year debentures.....	2,000,000		
" " " ".....	3½ per cent. debentures of 1904-1954.....	4,184,000		
" " " ".....	Convertible 6 per cent. debentures of 1908-1948.....	34,912,800		
" " " ".....	Stock.....	806,000		
Norfolk & Western.....	Secured 5 per cent. notes of 1908-1910....	7,500,000		April
Oregon Short Line.....	Utah & Northern Railway first mortgage 4 per cent. bonds of 1908-1933 ¹³	4,993,000	4,993,000	June
Pennsylvania.....	Consolidated mortgage 4 per cent. bonds of 1908-1948 ¹⁴	40,000,000		April
".....	Penn. Steel Freight Car Trust 4 per cent bonds of 1905-1909, 1915.....	900,000		
".....	Penn. General Freight Equipment Trust 4 per cent. bonds of 1906-1908, 1916.....	7,800,000		
Pere Marquette.....	6 per cent. notes, Series A & B of March 1908-1909, 1912.....	2,600,000	2,600,000	February
Philadelphia, Baltimore & Washington....	Serial 4 per cent. bonds (not mortgage) of January 1, 1909-1915, 1924.....	5,000,000		December
Philippine Railway.....	First mortgage 4 per cent. bonds of 1907-1937.....	1,879,000		March
Pittsburgh, Cincinnati, Chicago & St. Louis	Consolidated mortgage 4 per cent. bonds, Series G, of 1907-1957 ¹⁵	6,000,000		June
Pittsburgh, Fort Wayne & Chicago.....	Special improvement guaranteed stock ¹⁶	2,681,300		July
Pittsburgh & Lake Erie.....	Stock ¹⁷	5,000,000		November
Pittsburgh, Youngstown & Ashtabula.....	First general mortgage 4 per cent. bonds, Series A, of 1908-1948.....	2,000,000	1,500,000	June
Portland & Ogdensburg.....	First mortgage 4½ per cent. bonds of 1908-1928 ¹⁸	2,119,000	2,119,000	May
Reading Company.....	General mortgage 4 per cent. bonds, 1897-1907.....	1,366,000		August
St. Louis, Iron Mountain & Southern....	River and Gulf divisions first mortgage 4 per cent. bonds, 1903-1953.....	811,000		July
St. Louis & San Francisco.....	Equipment 6 per cent. notes of 1908-1918..	669,000		January
" " " ".....	Refunding 4 per cent. bonds of 1901-1951..	1,006,000	6,000	May
" " " ".....	General lien 5 per cent. bonds of 1907-1927	19,720,000		December
St. Paul & Des Moines.....	First and refunding mortgage 4½ per cent. bonds 1906-1936.....	560,000		
" " " ".....	Des Moines, Iowa Falls & Northern first mortgage 5 per cent. bonds of 1901-1931..	1,036,000		
Seaboard Air Line.....	Receivers' certificates 6 per cent., 1908-1911	3,260,000		June
Southern Indiana.....	Receivers' certificates 5 per cent., Series C..	4,250,000		December
Southern Pacific.....	Receivers' certificates.....	954,211		November
" " " ".....	First refunding mortgage 4 per cent. bonds of 1905-1955.....	14,000,000		
Southern Railway.....	Convertible 6 per cent. notes of 1908-1911..	15,000,000	3,000,000	October June
Tampa Northern.....	First mortgage 5 per cent. bonds of 1908-1936.....	1,331,000		July
Tidewater Co.	First lien 5-year 6 per cent. notes guaran- teed by H. H. Rogers, of 1908-1913....	17,000,000	10,000,000	May
Union Pacific.....	First lien and refunding mortgage 4 per cent. bonds of 1908-2008.....	50,000,000		June
Vandalia.....	Consolidated mortgage 4 per cent. bonds of 1907-1957. Series B.....	3,000,000		June
Virginian Railway.....	Stock.....	2,500,000		November
" " " ".....	First lien equipment 5 per cent. notes, due serially 1908-1918.....	3,750,000		November
Virginia & South Western.....	First consolidated mortgage 5 per cent. bonds of 1908-1958.....	4,000,000		May
Wabash.....	First refunding and extension mortgage 4 per cent. bonds of 1906-1956.....	2,445,000		August
Western Pacific.....	Second mortgage 5 per cent. sinking fund bonds of 1908-1952.....	20,000,000 ¹⁹		July
Wisconsin Central.....	First general mortgage 4 per cent. bonds of 1899-1949.....	795,000		

¹Guaranteed principal and interest by the New York Central & Hudson River.

²This issue extends a like amount of notes matured in January, February and March, 1908.

³First mortgage 5 per cent. bonds of 1878—January 1, 1908, were extended at 6 per cent.

⁴The bonds are guaranteed principal and interest by the Lake Shore & Michigan Southern. ^{4a}Of this amount \$7,782,000 have been listed.

⁵Extends a like amount of 4½ per cent. notes.

*Extends a like amount of 4½ per cent. notes.
 †January 1, 1908, there were \$11,558,000 refunded 4 per cent. bonds of 1904 outstanding and the notes here mentioned were offered in exchange, dollar for dollar. By July over 88 per cent. of the bonds had been exchanged for notes.

⁷Reported as sold.

*Part of the amount shown as issued were delivered later in the year.

¹⁹Old 7 per cent. bonds of the Kansas City, Fort Scott & Gulf were extended, the mortgage remaining the same.

¹¹Convertible into Kansas & Colorado Pacific first refunding mortgage bonds.

¹²There are also 11,513,000 bonds deposited as security for the convertible six notes of the M. P.

^{12a} These are the only strictly new capital issued and sold, and of these \$6,000,000 of the prior liens and \$2,450,000 of the general mortgages were issued to the Mexican government, and \$10,000,000 of the prior liens and \$6,750,000 of the general mortgages were sold for cash. For the exchange of securities for securities of the roads merged, it is necessary to refer to the merger plan—*Railroad Gazette*, April 10, page 526, and April 17, page 560.

¹³Extending 7 per cent. bonds due July 1, 1908.

¹⁴The mortgage securing these bonds is dated 1873.

¹⁶This stock is issued to the Pennsylvania for improvements made from time to time.

¹⁷Offered to stockholders at par to the extent of 50 per cent. of their holdings.

¹⁸Guaranteed principal and interest by the Maine Central.

¹⁸Guaranteed principal and interest by the Maine Central.

¹⁹The amount issued is uncertain since the agreement of sale to the Denver & Rio Grande provides that the Denver & Rio Grande is to buy enough of these bonds to enable the completion of the Western Pacific.

MILEAGE OF RAILWAYS BLOCK SIGNALLED.

The table showing railroads worked by the block system, given herewith, in the usual form, contains only one more name than the record of a year ago; and, as a consequence of the severely diminished incomes of most companies, the increase in mileage signaled is not large; but even so the total in the United States has now risen above sixty thousand miles of line, and the increase during the past year has been greater in the automatic than the non-automatic column. A few companies, indicated by a dagger (†), did not respond to our inquiry in season for this issue and for them the figures of one year ago are used. Some of the differences between this year and last are explained below; other comments will be found in the editorial column.

Baltimore & Ohio Southwestern.—This company expects to equip 25 miles of its line with automatic block signals during the coming year. Also, in compliance with a law of the state of Indiana which goes into effect on July 1, next, all lines in that state amounting to 220 miles, will be operated under the space interval, the telegraph block system being used except on those lines which have automatics.

Bessemer & Lake Erie.—Block signaled mileage includes 6.3 miles used for freight only.

Boston & Maine.—The 305.8 miles of road equipped with automatic block signals includes 24.7 miles, of which only one of the two tracks is equipped. This is counted as 12.3 miles of double track. The 22.2 miles non-automatic includes the other track of this section, which is counted as 10.9 miles.

Buffalo, Rochester & Pittsburgh.—On this road the space interval is used only for the protection of passenger trains.

Chesapeake & Ohio.—This road appears in the automatic columns for the first time. The total block-signal mileage of the road is greater than the total length of passenger lines operated, as shown in column 10, by 65.7 miles, which consists of lines used for freight trains only.

Chicago & Alton.—On this road 19.2 miles single-track formerly included in the automatic block signal mileage, is now worked by a controlled manual system, and the automatic signals have been taken down.

Chicago, Milwaukee & St. Paul.—The Pacific Coast extension of this road consists of new road, practically all built within the past year.

Chicago & Western Indiana.—This road has installed automatic signals on 10.3 miles formerly reported as worked by manual signals.

Delaware & Hudson.—One of the branches of this road, 13.6 miles long, formerly single-track, has been made double-track. The old track is equipped with automatic block signals, and the new one will be so equipped within the next year.

Delaware, Lackawanna & Western.—This road shows an increase of 28.6 miles equipped with automatic block signals—13.3 miles single track and 15.3 double track. The mileage operated by the company has increased 79 miles.

Erie.—The increase of signal mileage on this line represents mostly new pieces of railway which have been completed within the past year.

Illinois Central.—The total mileage reported for this road is official, but there may be slight errors in the division of the total between single-track and double-track. The total includes 15 or more very short pieces of road equipped with automatic block signals.

Iowa Central.—The decrease shown for this year is accounted for by the fact that last year there was included certain mileage over which the Iowa Central trains run, but which is not owned by that company.

Lehigh Valley.—This company has a large mileage used by freight trains, but equipped with automatic signals.

Michigan Central.—On most of those lines of this company where the manual block system is prescribed it is used for passenger trains only.

Norfolk & Western.—On this line 10.7 miles of double-track is counted as 5.4 miles, only one of the two tracks being signaled. The 26 miles entered against this road in a separate item is worked by the controlled manual system, but it is to be equipped with automatic block signals.

Pere Marquette.—On this line 29.3 miles reported last year as worked by the telegraph block system does not appear in the report this year.

Wabash.—The decrease of 12.4 miles in the length of road equipped with automatic block signals is due to an error made last year by which certain lines of the Terminal Railroad Association of St. Louis were included.

Other facts concerning methods of signaling, modification of protection on single track, the closing of block-signal stations a part of the time are assumed to be, on the roads so reporting, the same as they were last year; the present table is issued for the purpose of showing gross mileage only. It should be said, however, that the closing of block stations a part of the day or night is much more general than it was a year ago, many roads having adopted this expedient, when the hours-of-labor law went into effect, to obviate the necessity of employing additional signal men.

LENGTH OF RAILWAYS WORKED BY THE BLOCK SYSTEM, JANUARY 1, 1909.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Name of Railways.	Automatic block signals— Track— Single. 2 or more. Total.		Miles of road. (Non-autom. blk signals— Track— Single. 2 or more. Total.		Total operated passenger under both kinds. ated. system.		Per cent. Total operated passenger under both kinds. ated. system.		Increase, miles.*		Proposed new work 1909 (miles of road).
Alabama Great Southern—(see Q. & C.).											
Ann Arbor				1.0		1.0	1.0	292.0			
Atchison & Eastern Bridge				0.4		0.4	0.4	100.0			
Atchison, Topeka & Santa Fe		20.2	20.2	1,144.3	327.5	1,471.8	1,492.0	7,480.3	19.9	0.0	
Atlanta & West Point					6.0	6.0	6.0	87.0	14.5		
Atlantic Coast Line				505.0	84.4	589.4	589.4	4,181.0	14.1	0.0	
Baltimore & Ohio†	11.2	131.6	142.8	222.9	689.1	912.0	1,054.8	2,964.5	35.6		
Baltimore & Ohio Southwestern				8.7	50.7	59.4	59.4	981.0	6.0		25.0
Baltimore & Sparrow's Point					3.0	3.0	3.0	4.7	63.5	0.0	
Bessemer & Lake Erie				104.0	91.0	195.0	195.0	188.3	100.0	9.0	
Boston & Albany—(see N. Y. Central).											
Boston & Maine	3.1	305.8	308.9		22.2	22.2	331.1	2,238.6	14.9	29.0	214.0
Buffalo, Rochester & Pittsburgh				308.6	113.3	421.9	421.9	421.9	100.0	0.0	
Caldwell & Northern				2.4		2.4	2.4	23.5	10.2		
Camden Interstate—(see Ohio Valley).											
Central of Georgia				51.8	12.3	64.1	64.1	1,913.0	3.4		
Central of New Jersey	13.0	199.4	212.4				212.4	475.8	44.6		
Central Vermont				1.5		1.5	1.5	403.3			
Chesapeake & Ohio		11.0	11.0	1,289.1	274.3	1,563.4	1,574.4	1,497.7	100.0	91.4	
Chicago & Alton	151.1	141.1	292.2	370.6	37.9	408.5	700.7	904.2	77.5	See note.	
Chicago & Eastern Illinois	3.6	103.5	107.1	169.4	57.5	226.9	334.0	693.0	49.5		
Chicago & North-Western		606.1	606.1	2,354.9	228.5	2,583.4	3,189.5	7,697.7	41.4		
Chicago & Western Indiana		17.8	17.8		9.5	9.5	27.3	27.3	100.0		
Chicago, Burlington & Quincy†		36.3	36.3	8,289.1	523.4	8,812.5	8,848.8	8,968.2	98.7		
Chicago Great Western		7.9	7.9	264.2	26.8	291.0	298.9	735.0	40.7		
Chic., Ind. & So.—(see N. Y. C. lines).											

*Increase shown in column 8, as compared with mileage reported to the Interstate Commerce Commission one year ago, and printed in the *Railroad Gazette* of April 17, 1908.

†Copied from table one year ago. Corrected figures not received.

1. Name of Railways.	2.			3.			4.			5.			6.			7.			8.			9.			10.			11. Increase, miles.*	12. Proposed new work 1909 (miles of road).
	Automatic block signals— Track			Non-autom. blk signals— Track			Miles of road.			Total passenger under block system.			Total lines oper- ated.			Total operated system.			Total operated system.			Total operated system.							
	Single.	2 or more.	Total.	Single.	2 or more.	Total.	Single.	2 or more.	Total.	Single.	2 or more.	Total.	Single.	2 or more.	Total.	Single.	2 or more.	Total.	Single.	2 or more.	Total.	Single.	2 or more.	Total.					
Chicago, Milwaukee & St. Paul.....	5.9	42.6	48.5	4,484.7	385.4	4,870.1	4,918.6	6,550.2	75.1	321.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do., Pac. Coast Ext., inc. Mont. R.R.	.....	.....	.....	715.6	.....	715.6	715.6	.....	.....	715.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, Rock Island & Pacific.....	55.9	209.3	265.2	698.7	53.0	751.7	1,016.9	7,399.8	13.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago, St. Paul, Minneapolis & Omaha.....	.....	6.4	6.4	591.6	64.1	655.7	662.1	1,486.5	44.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago Terminal Transfer.....	.....	5.4	5.4	.....	.....	.....	5.4	46.1	11.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati & Muskingum Valley.....	.....	.....	.....	11.4	.....	11.4	11.4	148.5	7.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati, Hamilton & Dayton.....	.....	.....	.....	73.0	27.9	100.9	100.9	907.0	11.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cin., N. Or. & Tex. Pac.—(see Q. & C.).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland, Akron & Columbus.....	.....	.....	.....	11.0	8.0	19.0	19.0	177.4	10.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cornwall & Lebanon.....	.....	.....	.....	8.3	13.7	22.0	22.0	22.0	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland & Pennsylvania.....	.....	.....	.....	4.3	3.0	7.3	7.3	31.3	23.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cumberland Valley.....	.....	6.7	6.7	16.6	.....	16.6	23.3	162.2	14.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Davenport, Rock Island & Northwestern.....	.....	.....	.....	40.6	1.1	41.7	41.7	41.7	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware & Hudson.....	163.6	244.0	407.6	0.6	.....	0.6	408.2	743.9	54.8	See note.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware, Lackawanna & Western.....	14.7	480.4	495.1	1.6	.....	1.6	496.7	938.4	52.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erie.....	.....	117.9	117.9	656.1	628.7	1,284.8	1,402.7	1,809.3	77.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago & Erie.....	.....	.....	.....	240.4	8.4	248.8	248.8	248.8	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Jersey & New York.....	.....	10.5	10.5	26.1	.....	26.1	36.6	51.8	70.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N.Y., Sus. & W. & Wilkesbarre & Eastn	.....	.....	.....	.....	20.7	20.7	20.7	208.4	10.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gal., Harrisbg & S. An.—(see So. Pac.).....	.....	.....	.....	.....	2.2	2.2	2.2	436.5	0.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids & Indiana.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Trunk Railway System:	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Intrnatl. boundary to Black Rock Jct.....	.....	.....	.....	0.7	.....	0.7	0.7	0.7	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlantic & St. Lawrence.....	.....	.....	.....	165.1	.....	165.1	165.1	165.1	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Trunk Western.....	.....	.....	.....	7.0	323.9	330.9	330.9	330.9	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan Air Line.....	.....	.....	.....	105.6	.....	105.6	105.6	105.6	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit, Grand Haven & Milwaukee.....	.....	.....	.....	185.5	3.5	189.0	189.0	189.0	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chic., Det. & Canada Grand Tr. Junction	.....	.....	.....	54.7	2.7	57.4	57.4	57.4	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Clair Tunnel.....	2.0	2.0	2.0	.....	.....	.....	2.0	2.0	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Rapids Terminal.....	.....	.....	.....	1.1	0.4	1.5	1.5	1.5	1.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Great Northern.....	6.2	62.0	68.2	252.1	.....	252.1	320.3	6,600.0	4.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hocking Valley.....	.....	.....	.....	72.1	.....	72.1	72.1	340.0	21.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Illinois Central.....	38.9	238.2	277.1	754.6	1.2	755.8	1,032.9	4,357.0	23.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iazoo & Mississippi Valley.....	6.6	6.6	6.6	14.8	.....	14.8	21.4	1,370.0	15.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iowa Central.....	.....	.....	.....	11.0	.....	11.0	11.0	502.3	2.0	See note.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kentucky & Indiana Bridge & R.R. Co.....	.....	.....	.....	7.2	3.4	10.6	10.6	20.0	53.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lackawanna & Wyoming Valley.....	.....	.....	.....	1.0	2.4	3.4	3.4	22.6	15.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*Increase shown in column 8, as compared with mileage reported to the Interstate Commerce Commission one year ago, and printed in the *Railroad Gazette* of April 17, 1908.

†Copied from table of one year ago. Corrected figures not received.

RAILWAY OFFICERS ON THE 1909 OUTLOOK.

The following answers to our circular letter of inquiry on railway conditions throughout the country are printed in the same form as in previous years. We classify them geographically, but have agreed in each case to protect the identity of the writer.

QUESTION 1—HOW DOES THE GENERAL OUTLOOK FOR 1909 APPEAR TO YOU COMPARED WITH THE OUTLOOK A YEAR AGO AT THIS TIME, AND WITH THE NORMAL OUTLOOK IN YOUR TERRITORY? DO YOU CONSIDER THAT THE IMPROVEMENT IN CONDITIONS IS GOING TO BE SLOW OR RAPID?

Answers from Roads in Central West, and Trunk Lines.

Road A.—The outlook at this time is decidedly better than a year ago, but I think the improvement in conditions is likely to be rather slow. —*Vice-President.*

Road B.—The general outlook for 1909 appears better than the outlook a year ago. The business in prospect, however, will fall somewhat below the normal volume in this territory. I think the improvement in conditions will be rather slow. —*President.*

Road C.—The general outlook is very much better than it was a year ago at this time, but it is hardly up to normal. I think that the improvement in conditions will be moderate. —*President.*

Road D.—The general outlook for next year is good, but I think prosperity will grow slowly. —*General Manager.*

Road E.—The general outlook for 1909 at this time is much more encouraging than was the outlook a year ago, but conditions are still below normal throughout western Illinois. —*Vice-President.*

Road F.—The general outlook for 1909 appears to us to be a little brighter than that of a year ago. I believe that the return of better times will be slow and gradual. —*Vice-President.*

Road G.—The general outlook for 1909 seems reasonably good, although traffic conditions will not compare with the year 1907. —*President.*

Road H.—The general outlook for 1909 appears to me to be considerably better than a year ago. Business at that time had received a severe setback and the only prospect in sight was a considerable period of stagnation. At the present time, however, business has been improving gradually for a number of months, and has reached a considerable volume, although not quite up to the volume of two years ago. In my opinion there is going to be improvement from now on, but it will be gradual and depend a good deal on the early and intelligent settlement of the traffic debate in Congress. —*President.*

Road I.—The general outlook for 1909 appears more favorable than the outlook for the ensuing year appeared on December 3, 1907, and the normal outlook in territory local to our road is more favorable than in December, 1907, but does not indicate anything more than the average conditions obtaining in an agricultural territory. The improvement in conditions is going to be slow. —*Receiver.*

Road J.—There seems to be a general improvement in the volume of business, although there is a downward tendency in prices. I think improvement in conditions will be slow, which will probably be an advantage in the long run. —*President.*

Road K.—The outlook for 1909 appears better than that of a year ago at this time for the reason that no one seemed to know how far the depression would go, and all realized that the coming year would bring with it a presidential election. A year ago there was a great deal of depression that was hidden because of the desire of all concerned to be brave and not howl calamity. To-day the feeling is very much better. All concerned seem to be satisfied with the result of the election, namely, that industrial conditions will not be disturbed, and that it will be easier to obtain money under satisfactory conditions and at normal rates of interest. —*Vice-President.*

Road L.—The general outlook for 1909 appears better than a year ago and about normal. —*General Manager.*

Road M.—The general outlook for 1909 appears better than the outlook a year ago at this time. I consider that improvement in conditions will be and should be slow. —*President.*

Road N.—There is a marked difference in conditions of business as compared with a year ago. Our traffic officers have made a thorough canvass of the situation, and the general trend of replies received from shippers is that they expect better business during the coming year. It is comparatively safe to say that there will be a decided improvement over 1908, although the general impression is that it will be gradual, beginning about February 1. Last year every day brought reports of furnaces and mills being closed. No advices are being received of furnaces being kindled and mills started up. One very important factor will be the ability and the necessity of the railways to buy rolling stock, rails and other materials necessary for maintenance and improvement. —*Receiver.*

East—Answers to Question 1.

Road A.—The general outlook for 1909 looks better than the outlook a year ago. Improvement is going to be gradual. —*Assistant General Manager.*

Road B.—The general outlook for the year 1909 is most promising and satisfactory and in every particular far better than at this time a year ago. While the improvement in general conditions is going to be steady and continuous the indications are that it will be slow and sure, and thus lead to greater stability and permanency than if more rapid. —*President.*

Road C.—As at this time last year the business depression throughout the country had become acute and railway earnings everywhere had begun correspondingly to diminish, the outlook, by comparison for the next 12 months, seems to us to be more favorable than a year ago. Business conditions are showing evidence of improvement, but the improvement has not yet become pronounced or regular. One week it seems to show signs of much activity and perhaps the following week will not be correspondingly satisfactory, although holding what improvement has been made. —*President.*

Road D.—The general outlook is very bright. The improvement in general conditions we believe will be rapid. —*President.*

Road E.—The general outlook for 1909 appears to be considerably better than the outlook a year ago. Improvement in conditions I think will be gradual rather than rapid. The month of October showed a very large improvement over the previous months, although we do not expect the further improvement to be so rapid. —*Vice-President.*

Road F.—The general outlook appears much better in our territory, but is about 10 per cent. less than normal. Improvement is going to be slow. —*President.*

Road G.—The general outlook for 1909 appears to be better, and I think the improvement in conditions is going to be rapid. —*President.*

South—Answers to Question 1.

Road A.—At this time in 1907 (November) the business of our line commenced to go off at a rate so great that we were not able to form any conclusion as to where it would stop. This year there is considerable improvement, and the general feeling of the territory is strong toward a favorable outlook for 1909. —*General Manager.*

Road B.—The general outlook for 1909 in this section appears good. New land is being put in cultivation; new industries are locating with us; new transportation lines are being built; immigration is moderately heavy; all of which indicates healthy business conditions. As this territory did not feel the full effects of the recent depression as compared with other sections, a return to conditions existing prior to November, 1907, will not be so apparent. —*President.*

Road C.—I believe that the general outlook for 1909 in this territory is more favorable than was the outlook for 1908.

I think that the improvement in conditions will be gradual and steady. I do not look for rapid improvement.

—General Manager.

Road D.—Notwithstanding the failure of the cotton crop in the part of Louisiana, owing to the boll weevil pest, the general outlook for 1909, compared with the previous year, is very promising, and we look for a slow but steady improvement.

—President.

Road E.—The general outlook for the year 1909 as compared with the outlook a year ago at this time appears to me to be favorable to an increase in business. The improvement in conditions will be gradual but I think it will be substantial.

—President.

Road F.—The general outlook for 1909 appears much more promising than it did 60 days ago. However, we believe that the improvement in conditions will naturally be slow.

—Vice-President.

Road G.—The general outlook for 1909 appears to be better than a year ago at this time, but below the average for the two years preceding 1908. I consider that the improvement in conditions will not be rapid as, after money is provided, a certain time has to elapse for drawings to be prepared before inquiries can be sent out for new work, and orders will not be placed until after the inquiries are in.

—President.

Road H.—The general outlook for business for 1909 appears to be somewhat better than the closing months of 1908. I do not look for any great improvement until after the revision of the tariff is made.

—General Manager.

Road I.—The outlook for 1909 appears radically better than a year ago and is equal to the normal outlook in our territory. Improvement in business, we believe, will be slow but sure.

—General Manager.

Road J.—The outlook for 1909 in this particular territory is good and healthy. I think that the recovery from the recent depression will be slow, however, especially in view of the fact that this territory, to a certain extent, has suffered considerably from the boll weevil pest.

—General Manager.

Southwest—Answers to Question 1.

Road A.—Outlook for business is greatly improved over last year. In this section of the country the return to activity has been as rapid as was the effect of the panic last year.

—Vice-President.

Road B.—The improvement in conditions, if any, is going to be slow and gradual.

—Vice-President.

Road C.—At this time our earnings show an improvement over the same time last year, and we believe that the outlook for 1909 is encouraging and that business will gradually improve, but at the same time we believe that the improvement will be slow.

—Vice-President.

Road D.—The general outlook for 1909 appears to be much more favorable than at the same time last year, and I think that the improved conditions are going to continue, but not rapidly. However, as the business of this company hinges entirely upon crop conditions, and is not materially influenced by financial fluctuations, and as it is impossible to predict what the 1909 crop will be, the above reference to the general outlook is based entirely upon the healthy tone that seems to prevail in all lines of commercial business at this time.

—Vice-President.

Road E.—The general outlook for 1909 is very good. I think that the improvement in conditions will be very rapid. In fact, we have had a marked improvement in conditions in west Texas territory for the last three years.

—General Superintendent.

West—Answers to Question 1.

Road A.—The general outlook is considerably better than it was last year at this time. Improvement will be rather slow.

—President.

Road B.—The outlook in our territory is that improvement will be slow.

—President.

Road C.—The general outlook for 1909 appears to be much better and healthier than it was a year ago, and in this immediate vicinity business conditions are about normal at

the present time. We look for still further improvement, but do not think that it will take place very rapidly.

—General Superintendent.

Road D.—General outlook good. Improvement in conditions fairly rapid.

—President.

Road E.—The outlook for 1909 is decidedly better than a year ago. Confidence has practically recovered, and while we do not anticipate rapid improvement, we believe that improvement will not be marked by slowness.

—Vice-President.

Road F.—The general outlook for the coming year and for this territory is very bright, and I believe the improvement will be slow until early spring, when I think it will be very rapid.

—Vice-President.

Transcontinental and Pacific—Answers to Question 1.

Road A.—Unquestionably the general outlook for 1909 is better than that of a year ago and is nearly normal. The crops have been fairly good and are commanding high prices. The country in general is rich and growing richer.

—President.

Road B.—The outlook for 1909 is very much better in our territory than it was a year ago. Agricultural results for the year just past were very good. Much fall plowing has been done and all conditions for a favorable crop next year are good for this season of the year.

—President.

Road C.—The outlook is improved. The improvement in conditions, I think, will be slow.

—Vice-President.

Road D.—Outlook brighter.

—Vice-President.

Road E.—In my opinion, the general railway outlook is on the whole much more favorable than in December a year ago. At that time we were just entering a period of depression which profoundly affected the traffic and revenue. Indications are that railway traffic is beginning to show the effect of a better feeling; that business conditions are improved, and, with a gradual restoration of confidence, we may look forward hopefully to the future; should, as seems to be the trend of public opinion, the railway interests be allowed to rest, and be given an opportunity to recover from the effects of the flood of legislation passed in the last two years. We do not look for any unusual or rapid growth, but rather for a slow recovery which will gradually bring us back to normal conditions.

—Vice-President.

Road F.—The general outlook for 1909 appears to me a great deal better than a year ago at this time. I believe the improvement will be steady until normal conditions are again reached.

—President.

Mexico—Answers to Question 1.

Road A.—The calendar year 1909 will show a substantial improvement over this year. I do not think the improvement will be rapid in this country.

—President.

Road B.—The outlook for 1909 here is not as good as it was a year ago on account of the low price of silver. We anticipate that the improvement in conditions will be slow until silver goes up above 55 cents per ounce.

—General Manager.

QUESTION 2—WHAT KINDS OF TRAFFIC ON YOUR LINE OFFER THE BEST PROMISE AND WHAT KINDS OFFER THE POOREST PROMISE FOR 1909, AS COMPARED WITH A NORMAL YEAR?

Central West and Trunk Lines—Answers to Question 2.

Road A.—Our lines run through an agricultural territory and the population is prosperous because of the fairly good crop marketed at high prices. As a result, we have a good movement of grain in our wheat territory, with a favorable effect on earnings, and we should also get an improved business in general merchandise. In our territory, where corn is the staple product, it now appears that there will be a very large amount of feeding, which always results in a light tonnage compared with what would be handled if the corn were moved in its original condition.

—Vice-President.

Road B.—Iron and steel apparently offer the best promise for 1909.

—Vice-President.

Road C.—Iron and general industries offer the best promise,

but I think all business will improve together. I cannot select anything offering poor promise for next year.

—General Manager.

Road D.—Agricultural products and coal appear to be more nearly normal than do manufactured products, the output of which is far below normal at this time, with promise of only a slight improvement.

—Vice-President.

Road E.—The lumber business offers the best promise of any business at the present time. In our locality I think that outside of building materials other business will be about the same.

—Vice-President.

Road F.—The coal traffic offers the best promise and the grain traffic the least.

—President.

Road G.—Our traffic is so diversified that it is hard to answer this question accurately. I am inclined to think, however, that we shall see the greatest improvement in the movement of high class articles. We hope also for an increased movement in coal and in steel products. We do not expect much improvement in live stock and farm products.

—President.

Road H.—As applied to this line, the traffic in clay products, such as sewer pipe, fireboxes, brick, etc., are likely to show better results in 1909 than coal, lumber or agricultural products. As at present indicated, the poorest outlook is for the traffic in bituminous coal.

—Receiver.

Road I.—We are dependent upon the manufacturer for our traffic.

—Vice-President.

Road J.—Lumber traffic offers the best promise for 1909, and I think coal offers the poorest.

—General Manager.

Road K.—There is no special kind of traffic on our line that offers the best promise. Sixty per cent. of our business is coal and coke, and as it increases so increase the other classes of business.

—President.

Road L.—A large proportion of our tonnage is coal and ore, and naturally we look to these products for the largest increase in our earnings. The largest percentage of increase, however, will probably appear in iron and steel products. The long, dry spell which prevailed in this section of the country injured the grain crop very materially on this road and we cannot look for any great increase in that line of freight during the next season.

—Receiver.

East—Answers to Question 2.

Road A.—The increase will be well distributed. General improvement expected.

—Assistant General Manager.

Road B.—It is difficult at this time to reach any conclusions as to what kinds of traffic offer the best promise and what the poorest for 1909 as compared with the normal year. It seems, however, as though the raw materials required for fabrication into various manufactured articles, as well as the product thereof, will probably show the greatest improvement in traffic for the reason that the various industries have suffered during the past year a greater shrinkage of business than any other interest furnishing tonnage for railway transportation.

—President.

Road C.—Traffic in our territory is most largely derived from textile and other manufacturing industries, and as to them all there is a much more hopeful field than there was at this time last year.

—President.

Road D.—Our principal commodities are coal and lumber and both promise well for the coming year.

—President.

Road E.—Anthracite offers the best promise, merchandise the poorest.

—President.

Road F.—All traffic on our line is good.

—President.

South—Answers to Question 2.

Road A.—Our heaviest tonnage is in cotton—cotton factory products, lumber and fruit. The improvement in cotton is much more promising now than the other things, but we anticipate that lumber will take full place by next spring.

—General Manager.

Road B.—The coal mining and agricultural industries along this line will show the best promise. Nothing promises poorly.

—President.

Road C.—Lumber and naval stores are our best promises of traffic.

—General Manager.

Road D.—There has been no change in the character of cultivation in the past year, the principal crops being cotton, sugar and rice. We expect a large movement of lumber during the coming year owing to the recovery of swamp lands by the state drainage canals recently built.

—President.

Road E.—The traffic which offers the best promise for 1909 is merchandise, coal, lumber, grain and manufactured products. While up to the present time the movement of cotton has been heavier than last year, it is difficult to determine yet whether or not this heavy movement will continue or whether a large business of cotton will be healthy for higher prices.

—President.

Road F.—The traffic on this road is 90 per cent. coal. The tonnage at present is light, but I think it will improve after the first of the year.

—General Manager.

Road G.—The traffic which offers the best promise on our line is lumber and that which seems to offer the poorest promise is grain. These conditions are brought about on the one hand by the renewal of building operations; on the other by the high price of corn.

—General Manager.

Road H.—Our lumber business promises to be the best business in sight for 1909 and cotton will be the poorest.

—General Manager.

Southwest—Answers to Question 2.

Road A.—The products of agriculture seem to offer the best promise for 1909. General business shows no improvement.

—Vice-President.

Road B.—We believe that the improvement will be general but more marked in lumber and building material, although many of the lumber and timber plants that were closed down during the past are gradually resuming operation, and we believe that the demand for supplies and material will cause a more free movement of this traffic.

—Vice-President.

Road C.—With the continuance of the improved conditions all kinds of traffic along this line offer good promise.

—Vice-President.

Road D.—All kinds of agricultural traffic and traffic incident to building up new country will be offered during 1909.

—General Superintendent.

West—Answers to Question 2.

Road A.—The traffic of this line is about normal at present, and I expect it will continue so during 1909, the tonnage depending on the operation of mines and smelters.

—General Superintendent.

Road B.—Our traffic is chiefly timber products. The promise for a heavy increase in 1908 seems exceptionally good.

—President.

Road C.—Ore shipments offer the best promise.

—Vice-President.

Road D.—Lumber and wheat are the kinds of traffic that offer the best promise for 1909. No change in other products.

—Vice-President.

Transcontinental and Pacific—Answers to Question 2.

Road A.—Our tonnage in manufactured articles shows still a large decrease as compared with a year ago, but is not below that of 1906. The same applies to coal and ore and all necessary business of mining camps and to new enterprises in general, notably railway material. But what might be called the ordinary, every-day business of an agricultural country; that is, crop movement and the movement of supplies used by the agricultural class, is as good as at any time.

—President.

Road B.—I cannot specialize the lines of business in the manner suggested. The handling of construction material for large railway enterprises will not be as great in 1909 as during the past two years.

—President.

Road C.—We are dependent largely on crops and it is too early yet to estimate for next year.

—Vice-President.

Road D.—The traffic is picking up.

—Vice-President.

Road E.—The decrease in traffic on our line during the

present year has been principally in coal, lumber and manufactured products. Crop conditions have been good and shipments of fruit and other products of the soil very satisfactory. Prospects for the 1909 crop in the territory served by us are promising; shipments of citrus fruits from southern California are expected to be fully up to normal; planting of fall seed has been on a generous scale, particularly in the Northwest, where the farmers are planting increased acreage because of the failure of the spring wheat crop in 1908. We may therefore expect satisfactory tonnage of agricultural products for 1909, and with prospective gradual revival of manufacturing and other industries tonnage of other commodities should be better than during 1908.

—President.

Mexico—Answers to Question 2.

Road A.—The traffic connected with the mining industry promises best. At present it looks as though cotton would be the poorest.

—President.

Road B.—Lumber and wood offer the best promise and ore the poorest promise for 1909, as compared with a normal year.

—Vice-President.

QUESTION 3—WAS BETTERMENT WORK OTHER THAN THE STRICT NECESSITIES OF MAINTENANCE, ENTIRELY DISCONTINUED ON YOUR ROAD DURING 1908? IF SO, WHEN DO YOU THINK YOU ARE LIKELY TO TAKE IT UP AGAIN?

Central West and Trunk Lines—Answers to Question 3.

Road A.—We did not build any new line during 1908 but did a considerable amount of grade revision and ballasting, and our plans for 1909 are along the same lines.

—Vice-President.

Road B.—Betterment work was not materially discontinued on our roads during the year 1908. There was a reduction perhaps of 50 per cent. of the amount usually performed. We shall take up this work during the coming year.

—President.

Road C.—Betterment work was not suspended. We shall keep on with it in 1909.

—Vice-President.

Road D.—Betterment work was largely suspended by us during 1908. We did considerably more than many other roads but not as much as we would have done had times been better. We have not decided about next year, but it is probable that we will continue improvements and we may very likely increase them.

—General Manager.

Road E.—During 1908 this property was well maintained and some betterment work was undertaken, but only of a limited character. This same policy will be continued throughout the current year.

—Vice-President.

Road F.—Betterment and other work was not discontinued on our line during the depression of 1908.

—Vice-President.

Road G.—Heavy improvement work was discontinued July 1, 1907, but resumed again July 1, 1908, and the work that was started will be practically completed by July 1, 1909.

—President.

Road H.—Except during the last few months of 1908, not only was betterment work discontinued but ordinary maintenance was greatly curtailed. This latter, however, was a temporary measure and our maintenance, both of way, structures and equipment, is now on a normal basis. It is impossible to foretell when we shall again feel able to resume betterment work, but it will probably be six months hence at the earliest.

—President.

Road I.—Betterment work was not entirely discontinued during 1908, having been carried along cautiously and in less degree than normally on some work which we were doing. Our total expenditure in 1909 for this will probably be less than in the normal year, but we expect to resume regular betterment work now stopped for the winter after May 1, 1909.

—Receiver.

Road J.—Betterment work other than strict necessities for up-keep was entirely discontinued. It will probably be resumed in April, if the conditions continue to improve.

—Vice-President.

Road K.—Betterment work not absolutely necessary was discontinued during 1908, and we do not contemplate any

change in this program until general business conditions look brighter.

—General Manager.

Road L.—Work was not discontinued on our road during 1908. About seven miles of double track was being built in which there were five tunnels, and this work has been carried on continuously besides some other improvement work.

—President.

Road M.—All betterment work of every kind was discontinued on this road in 1907 when it became apparent that a financial and business depression was impending. Since the appointment of the receiver we have been authorized to complete certain improvements which had been started in 1906-1907 and at which work is now under way, consisting principally of the completion of a cut-off line, construction of repair shops, roundhouse and terminal yard, with some rail betterments, etc.

—Receiver.

East—Answers to Question 3.

Road A.—Betterment work was not entirely discontinued on our road during 1908, but was carried along throughout the year on a basis somewhat reduced from that of previous years. With the improvement of traffic and earnings on the lines of this company, we shall proceed with our betterment work on the same scale as in former years.

—President.

Road B.—Betterment work other than concluding matters that were in process has been pretty generally held up, and as the winter season is not a time when this kind of work can be carried on in this region, nothing definite as to the resumption of improvement work will be considered until the opening of spring, when it will be possible to determine whether the improvement in business conditions warrant resumption.

—President.

Road C.—Part of our betterment work was carried on as usual and is now under full headway.

—President.

Road D.—Betterment work was prosecuted and maintenance work kept up to the standard.

—Assistant General Manager.

Road E.—Betterment work was not entirely discontinued during 1908, although no heavy work was undertaken. We do not expect to undertake any heavy work for some time.

—Vice-President.

Road F.—Betterment work, except strict necessities, was entirely discontinued. We do not expect to take it up again to any extent until we are relieved from the government by commission.

—President.

Road G.—Betterment work on our line was continued during 1908 the same as usual.

—President.

South—Answers to Question 3.

Road A.—All betterment work last year was discontinued and all expenditures were held as low as was possible consistent with safety. It does not appear that we shall be able to take up any improvement work before the summer of 1909.

—General Manager.

Road B.—No extensive betterments are in contemplation. We have continued to make only such betterments as were absolutely necessary.

—President.

Road C.—We did not discontinue any important work except actual construction during the depression. Full forces were maintained in every department.

—General Manager.

Road D.—No new betterment work was done during 1908.

—President.

Road E.—During 1908 we continued only such construction work as was absolutely necessary. We have continued with the work that was on hand and required completion. Any new construction work will be taken up gradually as the conditions of business may warrant.

—President.

Road F.—Betterment work, other than the necessities of maintenance, has not been resumed to any extent. We shall not undertake any extensive betterment work until conditions assume a more normal aspect, although we contemplate some additional mileage during the early part of 1909.

—Vice-President.

Road G.—The betterment work on our road was not discontinued. On the contrary, we took advantage of the ex-

cellent supply of labor to push betterment work, and the physical condition of our roadbed and locomotive power is much better than it ever has been before. —President.

Road H.—Little betterment work was necessary this year and very little will be required in 1909.

—General Manager.

Road I.—Betterment work, other than strict necessities of maintenance, was discontinued during 1908, and will not be resumed except in a very moderate way until the end of the present fiscal year (June 30, 1909).

—General Manager.

Road J.—Our people think from the present outlook that it may be possible for us to build another section of about 80 miles during 1909, or at least start work on it.

—General Manager.

Southwest—Answers to Question 3.

Road A.—Some necessary improvement work was undertaken after the opening of the current fiscal year, but on a restricted scale. With continued prosperity we may be able to maintain our usual stride in this direction.

—Vice-President.

Road B.—Betterment work was either discontinued or curtailed, but during the present fiscal year we have begun again on a few of the more important jobs.

—Vice-President.

Road C.—The betterment work on our road has been kept well in hand, and the physical condition in many respects improved. Under normal conditions we should have bought additional heavy rails during 1908 as well as increased our shop and other facilities to some extent, but we deferred on account of conditions that prevailed; otherwise our property has been fully maintained.

—Vice-President.

Road D.—Betterment work was not discontinued on this line during 1908 except in so far as it was necessary to use the machines and men in repairing damage brought about by the unprecedented floods in the early part of the year. We made no reduction during the panic in the forces employed in any of our shops.

—Vice-President.

Road E.—All our improvement, including heavy ballasting and bridge work, has been carried on through 1908, and we intend to carry on permanent bridge work, building of stations and other improvements, and to complete our ballast work during 1908.

—General Superintendent.

West—Answers to Question 3.

Road A.—We shall not take up betterment work again until traffic increases.

—President.

Road B.—Betterment work during 1908 was confined to strict necessities of maintenance. Expect to resume normal betterment work during 1909.

—General Superintendent.

Road C.—No betterment work was contemplated in 1908. Construction work to some extent was abandoned during the early part of the year, but is now again under way and will be about completed by the close of the year.

—Vice-President.

Road D.—A great deal of betterment work has been finished this year and considerable is now under way which will be continued in 1909.

—Vice-President.

Transcontinental and Pacific—Answers to Question 3.

Road A.—Betterment work on our line was continued to a large extent all through 1908, though much of that which had been proposed was abandoned. A large proportion of this latter has been taken up again and a fair amount is now being done.

—President.

Road B.—There was no letting up in betterment work on our road during the past year. We went right ahead with all improvements of every character, both in the maintenance of way and equipment. Our equipment never was in as good condition as it is to-day. The rest of the property is in first-class shape.

—President.

Road C.—Our betterment work was largely discontinued. Some now has been resumed, but I cannot definitely state of future action.

—Vice-President.

Road D.—Our work was not discontinued.

—Vice-President.

Road E.—Betterment work was not entirely discontinued

on our lines during 1908 although it was largely curtailed, and new work which was not regarded as urgent was deferred, action on these matters being governed in every case by the circumstances. In the past few months we have resumed work on many projects which we consider necessary for the economical operation of the lines.

—Vice-President.

Road F.—We have in mind no special betterment work for 1909.

—President.

Mexico—Answers to Question 3.

Road A.—Betterment work was entirely discontinued a year ago but has been resumed in a moderate way.

—President.

Road B.—Betterment work was continued without interruption and also work on our new extension.

—General Manager.

QUESTION 4—DURING 1908 HAVE YOU FOUND ANY MATERIAL ECONOMY IN OPERATION DUE TO THE INCREASED EFFICIENCY IN EMPLOYEES? OUR IMPRESSION HAS BEEN THAT \$1.00 HAS GONE MUCH FURTHER THIS YEAR THAN IN MANY YEARS PAST BECAUSE OF THE ELIMINATION OF THE LEAST ABLE WORKERS, AND OF THE GENERAL DESIRE TO RETAIN POSITIONS.

Central West and Trunk Lines—Answers to Question 4.

Road A.—We cannot find that we profited to any appreciable extent during 1908 as the result of increased efficiency of employees.

—Vice-President.

Road B.—Unfortunately we have not found any material economy in operation due to the increased efficiency of employees. It is doubtful whether a dollar has gone further this year than in the past.

—President.

Road C.—We have found increased economy. We believe that we get from 20 to 25 per cent. more efficiency.

—Vice-President.

Road D.—We have found material economy in operation on account of efficiency, especially in shop and track labor; also in freight houses and everywhere that common labor is used, and to some extent in our clerical forces, as we have been able better to select men or retain those that give best results.

—General Manager.

Road E.—Greater efficiency has been obtained among the workmen, especially in the mechanical department. This was partially due to rates in force and partially because of more careful attention to details on the part of those in charge.

—Vice-President.

Road F.—There was a general improvement in the labor situation during the past depression. We get more labor for \$1 now than we did a year ago.

—Vice-President.

Road G.—There has been marked economy in operation due to increased efficiency of employees.

—President.

Road H.—I agree with you that the efficiency of employees generally has been decidedly greater during 1908 than in the previous few years, due to the weeding out of the poorer workmen and to the knowledge on the part of the men who were retained that jobs were scarce.

—President.

Road I.—Our impression has been that \$1 has gone much further this year than in many years past because of the elimination of the least able workers and of the general desire to retain positions.

—Receiver.

Road J.—There has undoubtedly been some improvement in the efficiency of the labor employed within the last year, but this is probably due to the fact that only the best labor has been retained and the more inefficient labor has been laid off, which naturally raises the average efficiency.

—Vice-President.

Road K.—We have found material economy. The quitters, clock watchers and drones were weeded out. Our best men wanted to retain their positions and showed their mettle by delivering the goods during the hard times.

—President.

Road L.—I believe part of the economy in operation during 1908 was due to the increased efficiency of employees.

—General Manager.

Road M.—I am informed that during 1908 there was mate-

rial economy in operation, due to the increased efficiency of employees, and that a dollar has gone much further than in recent years past for the reasons stated above.

—President.

Road N.—There has been without doubt a considerable economy due to the reason; also an improvement in the service, particularly in the transportation department, due both to the elimination of the least able workers and to the increased desire to render such service as would secure consideration for retention in the service.

—Receiver.

East—Answers to Question 4.

Road A.—Material economy in operation and in maintenance has been effected due to the increased efficiency of employees, and it seems as if the railways of the country generally are likely to benefit permanently in this direction from the reduction in business during the past year and the consequent surplus labor of all kinds.

—President.

Road B.—It is difficult to give detailed illustrations of the increase of efficiency of employees resulting from the business depression and the large reduction in the number of men, but we find generally a much greater willingness on the part of those who were fortunate enough to be retained in service to do better work and to be less critical about conditions of labor, schedules, etc.

—President.

Road C.—We have found considerable economy in operation, due to the increased service of employees.

—President.

Road D.—The fact that positions have not been so easily obtained as they were in 1907 has no doubt had its effect in increasing efficiency.

—Assistant General Manager.

Road E.—Generally, we are inclined to think there has been increased efficiency of employees for the reasons which you have given.

—Vice-President.

Road F.—Efficiency has increased about 15 per cent.

—President.

Road G.—We find a great economy in operation due to the increased efficiency of employees, and find that \$1 has gone much farther this year than in many years past.

—President.

South—Answers to Question 4.

Road A.—We find efficiency in labor from every standpoint, but more especially in the weeding out of new, inexperienced and inefficient employees when casting off our surplus. Therefore a dollar has gone much further than usual. I should say the increase in efficiency amounted to from 20 to 25 per cent.

—General Manager.

Road B.—We have found no economy. The character of our line and the traffic handled preclude any extensive economies in the line suggested.

—President.

Road C.—We have found no material economy in operation due to the increased efficiency of employees.

—General Manager.

Road D.—There has been some material economy in operation during 1908 due to the increased efficiency of employees. To what extent, however, it is not possible to state in definite terms. This increased efficiency is due to retaining in the employ of our company the best men we could obtain, while a year ago when labor was scarce we were not afforded an opportunity to make the selection that has been possible during the past year.

—President.

Road E.—We have found that we have been able to effect some economy in operation due to closer management and to a realization by the employee that conditions have been considerably changed. We believe that we have got better results for every dollar spent during the past five or six months than for the same period last year.

—General Manager.

Road F.—The efficiency of our employees has been better during the depression.

—President.

Road G.—We have noticed very little increased efficiency in employees. The national and state legislation, by enacting laws unfavorable to the corporations, has had the effect of making all classes of workers dissatisfied.

—General Manager.

Road H.—During 1908 we have found material economy in operation resulting from increased efficiency of employees.

—General Manager.

Road I.—We found shortly after the panic commenced that we were able to obtain labor somewhat cheaper and the efficiency of the same improved to a certain extent.

—General Manager.

Southwest—Answers to Question 4.

Road A.—Unquestionably we have been able to conduct our business with much greater efficiency and despatch, thereby getting a better outlay for our money. The slack business enabled us to weed our undesirable employees and line up our organization on a much better footing. The value of a job more strongly impressed itself on the men and they were eager to make extra effort on this account. At the same time the railway did not unnecessarily increase their duties.

—Vice-President.

Road B.—There has been some economy in operation, due to increased efficiency of employees, more particularly, however, in the maintenance departments.

—Vice-President.

Road C.—There has been some improvement, due to increased efficiency of employees brought about by the very reasons given in your inquiry.

—Vice-President.

Road D.—I think economy in operation is manifested and that it is due to increased efficiency displayed by employees during the panic year. I agree with you in thinking that a dollar has gone much further this year than in many years past.

—Vice-President.

Road E.—We have had quite an increased efficiency over last year during 1908.

—General Superintendent.

West—Answers to Question 4.

Road A.—We have found next to no economy. Schedules are the same.

—President.

Road B.—Yes; operating conditions are much better.

—President.

Road C.—During 1908 we have found material economy in operation due to the retention of the most competent employees during the period of depression.

—General Superintendent.

Road D.—We have found labor much more efficient during 1908 than during 1907. We have had no chance to notice any difference in the operating, but the increase in the efficiency of labor was very near 100 per cent.

—President.

Road E.—The panic beginning with October, 1907, forced the trimming down of all pay-roll expenses, which had the salutary effect of calling employees' attention to the fact that positions were not being distributed for the asking, resulting in retaining in the railway service men satisfied with their positions and more able than would have otherwise been the case. Excessive rental charges and general living expenses were materially reduced, though salaries of those retained in service were kept the same as in 1907. Naturally the dollar increased in value to the holder.

—Vice-President.

Road F.—I believe the increased efficiency of work of employees in 1908 was fully 33½ per cent., due to the surplus of labor this year as compared with the extreme shortage of labor last year.

—Vice-President.

Transcontinental and Pacific—Answers to Question 4.

Road A.—It is unquestionable that during 1908 there has been a marked increase in the efficiency of employees, and you are quite right in the impression that a dollar has gone further than in many years past because of the elimination of the least able workers and of the general desire to retain positions.

—President.

Road B.—There has been an increased efficiency of employees which has resulted in considerable economy. There has been a better feeling among railway employees in their desire to serve the company. They are also waking up to the fact that their best interest lies with the company in co-operating with it for better business methods and in trying to avoid hasty, foolish and unnecessary legislation.

—President.

Road C.—There has been material economy in the increased efficiency of employees, but it is difficult to tell how much. The older men have been employed and naturally are more

efficient than the surplus of men we have had to take into our service the last few years.

—Vice-President.

Road D.—Efficiency has increased.

—Vice-President.

Road E.—In the past few months we have been able to bring about more economical operation, partly because light traffic permitted the clearing of yards and the reduction of the number of trains on our single-track lines, enabling us to reduce forces as well as overtime. Naturally selection was exercised in making reductions, the inexperienced and inefficient employees being dropped. Through better distribution of motive power, reduction of speed and attention to loading, we have increased trainloads so that we are getting much more work from the force employed than under 1908 conditions. This has been offset to a certain extent, however, by very high wage schedules and very short regular day's work for telegraph operators.

—Vice-President.

Road F.—There is no doubt that we are getting better service and results from the labor we are now employing at less wages than we did a year ago.

—President.

Mexico—Answers to Question 4.

Road A.—There has been a decided economy in operation owing to the increased efficiency of employees simply because there are so many idle railway men that those in the service were much more careful to comply with the rules and regulations of the company and behave themselves than they had been when the demand was in excess of the supply.

—President.

Road B.—The efficiency of our employees has been very much better during the past year than it was before.

—General Manager.

QUESTION 5—TO MAKE THIS SPECIFIC, HOW DO YOUR LABOR COSTS COMPARE WITH THOSE OF LAST DECEMBER FOR A GIVEN AMOUNT OF WORK DONE?

Central West and Trunk Lines—Answers to Question 5.

Road A.—We do not find any appreciable difference.

—Vice-President.

Road B.—The costs of labor at present do not differ materially from those of a year ago.

—President.

Road C.—Our labor costs have been decreased.

—General Manager.

Road D.—Without going into detail I can say that the pay-rolls, for instance in the car department, have been very greatly reduced, and yet the equipment has been maintained and even improved and an increased number of cars have been put through the shop with a less number of men.

—Vice-President.

Road E.—It is impossible, except in a few minor instances, to compare unit costs of labor where the costs depend solely upon the individual employee. Most costs are influenced largely by conditions over which the individual has no control. This is particularly true in the train, station and yard service, whose pay-rolls are over 50 per cent. of our total labor bill. Only a little of our shop work is on a piece-work basis, so that here also no exact comparison can be made.

—President.

Road F.—Labor costs are practically on a par for a given amount of work performed with those of last December.

—Vice-President.

Road G.—The only difference in our labor cost is in our section laborers. Last year at this time we were paying \$1.50; to-day we are paying \$1.35. The wages for other classes of labor skilled and unskilled were not reduced.

—Vice-President.

Road H.—Data for an accurate comparison of this month with December, 1907, are not yet available. A comparison of July, 1908, with July, 1907, when business was at a high point, shows that with a decrease of gross ton-mile handled of a little less than 23 per cent., a decrease in the various items making up the cost of conducting transportation under control of superintendents amounting to 35 per cent. was effected, a large part of which was due to the elimination of overtime on the road. The men entered upon the work with enthusiasm and interest that went a long way toward the improvement

of the service and the enforcement of discipline. It was a comparatively easy matter.

—Vice-President.

East—Answers to Question 5.

Road A.—It is difficult to get any very accurate estimate of what this increased efficiency amounts to for a given kind of work. It is only possible to give an estimate, and this seems to be somewhere from 10 to 12½ per cent.

—President.

Road B.—We estimate a saving of 10 per cent.

—President.

Road C.—The labor cost as measured in costs per ton-mile, car-mile or ton-mile, and in tons handled at stations, cars delivered at yards, etc., show a decrease.

—Assistant General Manager.

Road D.—I am unable to make any comparisons as you suggest. Our labor costs during the past few months have been very much lower than they were for the corresponding months last year. We are convinced that this is due to the increased efficiency of employees, but it is doubtless also influenced by the very favorable weather conditions.

—Vice-President.

Road E.—There has been no change in the rates paid labor. Decrease in labor cost has been due to reduction in number of men. Any decrease in daily or monthly earnings of men has been due to a decrease in hours work.

—President.

Road F.—Our labor costs are about 75 per cent. as compared with those of last year.

—President.

South—Answers to Question 5.

Road A.—No change.

—President.

Road B.—Our labor cost represents about 70 per cent. of the price we paid for the year previous.

—General Manager.

Road C.—This question cannot be answered specifically, but I should say that there should be an increased efficiency this year of at least 5 per cent. in the labor cost, as compared with December, 1907.

—President.

Road D.—There has been practically no change in the labor cost as compared with last December, for a given amount of work done.

—General Manager.

Road E.—It is a hard matter to state specifically the difference in cost of labor of December, 1908, as compared with December, 1907. There has been no reduction in rate of compensation and the increased efficiency probably amounts to as much as 5 per cent.

—General Manager.

Road F.—Labor costs here have not decreased to any great extent. In this matter I have to depend mostly upon other men of experience in railway lines, as the South has not had enough railway construction to have any large number of able workmen. The salaries I have to pay to get northern men here are in excess of the wages paid for like service for the north on account of changing and moving families, and a great many inducements have to be offered to get men to come South.

—General Manager.

Southwest—Answers to Question 5.

Road A.—We have not fully worked up any statistics covering your inquiry except at some important points where large forces are employed and where our estimates of labor cost for work done indicate an improvement of fully 10 per cent.

—Vice-President.

Road B.—Our labor cost for this year compared with the same period last year is decidedly in favor of the present time, not that we have reduced the compensation of labor but that labor has increased in efficiency.

—Vice-President.

Road C.—I believe we are getting at least 10 per cent. increase in efficiency.

—General Superintendent.

West—Answers to Question 5.

Road A.—Our costs are about the same.

—President.

Road B.—Our costs are about 10 per cent. less.

—President.

Road C.—Labor costs for a given amount of work are less this year.

—General Superintendent.

Road D.—No appreciable difference, but greater ease in securing men for the work at hand. —Vice-President.

Transcontinental and Pacific—Answers to Question 5.

Road A.—General consensus of opinion seems to be that the greatest efficiency has been from 15 to 25 per cent.

—President.

Road B.—The cost for a given amount of work done at the present time is materially less than it was last December for the reasons set forth. Our train mileage cost is less than last year and we are handling more tons per train. It is the unanimous opinion of our officers that the efficiency of the shop forces is very much greater than it was last December.

—Vice-President.

Mexico—Answers to Question 5.

Road A.—I should say roughly that our labor costs us about two-thirds of what it did a year ago for the same amount of work.

—President.

Road B.—The cost at the present time, as compared with a year ago, is 20 per cent. less for a given amount of work done.

—General Manager.

QUESTION 6—HOW DO COSTS OF MATERIALS COMPARE WITH THOSE OF A YEAR AGO?

Central West and Trunk Lines—Answers to Question 6.

Road A.—The costs of ties and lumber is less than a year ago, and that is true also of some articles made of steel.

—Vice-President.

Road B.—The costs of materials are about 10 per cent. less than a year ago.

—President.

Road C.—Materials generally lower, especially ties and lumber products. Other material has generally been somewhat reduced in price.

—General Manager.

Road D.—In some few instances, contracts covering the year's supply of certain materials have been placed at a decreased figure, but in our recent negotiations higher prices than those asked last year have prevailed. These contracts were not let.

—Vice-President.

Road E.—Materials are somewhat cheaper than they were a year ago.

—Vice-President.

Road F.—The cost of materials does not vary much from a year ago.

—President.

Road G.—The prices for materials generally average very little less than a year ago because reductions in the cost of some miscellaneous articles have been small in the aggregate, as compared with the large item of ties, fuel, coal and rails, where no reduction has been made.

—President.

Road H.—Costs of material do not show an appreciable variation from a year ago.

—Receiver.

Road I.—The cost of our principal materials, such as structural steel, rail and machinery, are about the same as they were a year ago. Coal is about the only item that has been cheaper.

—President.

Road J.—There has been a slight reduction in nearly all kinds of material, except certain lines of standard supplies.

—Vice-President.

Road K.—There is little change in the cost of the material this year compared with a year ago. Some items, however, show a decrease.

—General Manager.

Road L.—There has been no material change in the cost of materials as compared with a year ago.

—President.

Road M.—Prices are slightly over what they were a year ago, although the manufacturer, as a rule, did not feel that orders would be forthcoming at any price that would be profitable and no concessions have been made. On such materials as we have been purchasing the deliveries are much better. The lumber market is showing a little more strength at the present time and prices are about on the same basis as a year ago.

—Receiver.

East—Answers to Question 6.

Road A.—It is difficult to give any but an estimate of the relative decrease in the cost of all kinds of materials used by railways compared with those of a year ago since the reductions in different articles vary widely from none at all, in the case of steel rails, to other lines of materials the prices

of which are less by as much as from 25 to 33½ per cent. I should say the average reduction in the cost of materials was from 15 to 20 per cent.

—President.

Road B.—The cost of materials has not radically changed although there have been reductions here and there which, as a whole, have had a favorable effect upon the operating expenses.

—President.

Road C.—Cost of materials will average about 5 per cent. cheaper.

—President.

Road D.—Substantially no change.

—General Manager.

Road E.—The cost of materials is probably on an average from 10 to 15 per cent. below what it was a year ago.

—Vice-President.

Road F.—Lumber and ties have decreased from 13 to 25 per cent. Metals have decreased from 7 to 28 per cent.

—President.

Road G.—The cost for materials is considerably less, say 25 per cent., than it was a year ago.

South—Answers to Question 6.

Road A.—Taken as a whole, there is a reduction of 10 per cent. in material.

—General Manager.

Road B.—Lumber, etc., much lower; iron and steel articles lower, but not proportionately.

—President.

Road C.—Costs of materials little affected.

—General Manager.

Road D.—Railway material is somewhat cheaper and more easily obtained than a year ago.

—President.

Road E.—The cost of material this year, as compared with the same period last year, is slightly less, but on some of the principal items such as iron and steel, there has been no reduction.

—President.

Road F.—There is a slight decrease in supplies for the maintenance of way and motive power departments.

—General Manager.

Road G.—Costs of materials, generally speaking, are less than they were a year ago.

—General Manager.

Road H.—Cost of material compared with a year ago is very much less.

—General Manager.

Southwest—Answers to Question 6.

Road A.—Approximately 20 per cent. less.

—Vice-President.

Road B.—There has been a slight decrease in the cost of lumber and of some few other articles; however, the largest item of material used has remained about the same.

—Vice-President.

Road C.—Although we are not in the market for any unusual amount of supplies and materials, we find some reduction in such supplies and materials as we are now purchasing.

—Vice-President.

Road D.—With the exception of lumber and timber, there has been no appreciable change in the cost of materials. The cost of timber, lumber and ties has decreased during the last 12 months.

—Vice-President.

Road E.—Cost of materials is running about the same as a year ago. Perhaps steel is a little low, but would seem to be going up. Lumber is rather cheaper, but is going up, our purchases having been almost the same as in February, 1907, and as in the early part of this year.

—President.

West—Answers to Question 6.

Road A.—Costs are somewhat less.

—President.

Road B.—Our costs are 5 per cent. less.

—President.

Road C.—There is not very much difference in the cost of materials except probably a slight decrease.

—General Superintendent.

Road D.—There has been a small reduction in the cost of material, not about 10 per cent.

—President.

Road E.—We figure a decrease of about 5 per cent. on general supplies and operation.

—Vice-President.

Road F.—Cost of materials this year has been about 10 per cent. lower than last year.

—Vice-President.

Transcontinental and Pacific—Answers to Question 6.

Road A.—The cost of material is somewhat less than that of a year ago, possibly 10 per cent.

—President.

Road B.—Material costs do not vary greatly from a year ago, except in certain classes of wooden material and some of the metals.
—President.

Road C.—There has been a decrease in the prices of material such as lumber, ties, track fastenings, materials used in car repairs and in shops. Prices are considerably higher than normal, defining normal as the average price for the last 10 years. Pig iron costs from 16 to 20 per cent. less than one year ago; iron and steel bars and billets from 10 to 12 per cent. less; steel rails no change; lumber from 10 to 15 per cent. less, and unweighted average on all acid materials would be from 7 to 8 per cent. less. Since materials cover about one-third of the operating expenses, the other two-thirds being labor, the effect of material reductions on the total operating estimate would probably be less than 3 per cent.
—Vice-President.

Road D.—Costs of material are lower at present than a year ago. This is especially true of ties.
—President.

Mexico—Answers to Question 6.

Road A.—The cost of material has not been reduced extensively.
—President.

Road B.—The cost of materials and supplies is less than it was a year ago.
—General Manager.

QUESTION 7—WILL THERE BE ANY MORE HARM DONE IN THE NEAR FUTURE BY RECKLESS STATE LAW MAKING IN YOUR TERRITORY, OR DO YOU THINK THAT THE CRISIS HAS PASSED, AND THAT THE TENDENCY NOW WILL BE FOR CONSERVATIVE LAWS RATHER THAN RADICAL ONES?

Central West and Trunk Lines—Answers to Question 7.

Road A.—I doubt if there will be any serious anti-railway legislation among the states in our territory in the immediate future.
—Vice-President.

Road B.—I do not believe that much further harm will be done by reckless state law making in this territory. I think the crisis has been passed and that the tendency is towards conservatism in rate legislation.
—President.

Road C.—Can only hope for more conservatism. There appear evidences of it.
—Vice-President.

Road D.—God only knows what politics may do! I am simply hopeful.
—General Manager.

Road E.—I do not believe that there will be much, if any, further state legislation in Illinois during the coming year that will affect the railways. I believe that the legislator, of even average ability, has come to understand that the campaign against railways was carried beyond the safety limit, and that further adverse legislation would result disastrously.
—Vice-President.

Road F.—I think we have passed the crisis of reckless state law making and the people have come, to a greater or less extent, to see the folly of their ways, and I look for legislation in this quarter to be more conservative than that of a year ago.
—Vice-President.

Road G.—We think there will be very little harmful legislation in 1909.
—President.

Road H.—The wave of hostile legislation directed at the railways by the state legislatures has largely spent its force, and for a time there will probably be few new radical laws. The recently enacted laws, however, are still on the statute books, and it will take some time before public sentiment which will favor doing justice to the roads will become strong enough to secure their repeal or modification. This is as necessary to the prosperity of the roads as insurance against new attacks.
—President.

Road I.—We consider that the crisis has passed, and that the tendency from now on is likely to be toward interpretation of the existing laws in a less radical manner than heretofore and is not likely to lead to the passage of laws any more radical than those already on the statute books. We do not look for the passage of laws during the coming year any more conservative than those already enacted, but feel that nothing more radical than those passed will be enacted.
—Receiver.

Road J.—There seems to be a more healthy public opinion in connection with railways and other corporate develop-

ments, and I think the crisis has been passed in the Virginias.
—President.

Road K.—I do not anticipate that the railway laws of the state of Illinois will be changed in the near future. Understand that in this state our railway commission does not determine our minimum rates. The schedule of rates they have prepared for us are maximum rates, and are, generally speaking, distance rates for use on one line of railway; being maximum rates, they do not interfere with the making of joint rates by connecting carriers to meet commercial conditions and competition, as so long as we do not exceed the maximum rate for a given distance on one line of railway, the commission does not interfere with us. While they maintain a freight classification, it is based largely on the western classification, and I have not found it operating against us to any extent.
—Vice-President.

Road L.—We hope the crisis is past in this state for reckless law making, but the state is still suffering from that law making and will continue to suffer until some modification and absolute assurance of conservative action in the future.
—General Manager.

Road M.—We do not anticipate that future legislation in this state will be without due consideration of the rights of the railways.
—Receiver.

East—Answers to Question 7.

Road A.—It seems as though the craze for passing unjust laws regulating railways and reducing their revenues should be over, for the time being at least, and that the railways may fairly count upon a period—of what length, it is impossible to say—during which they will be freed from the harassing uncertainty of what may result to them from the effects of ill-advised legislation such as has been passed.
—President.

Road B.—In this section there has not been much reckless state law making affecting corporations, and we have no reason to anticipate serious difficulties in this direction in the immediate future.
—President.

Road C.—We believe the crisis has passed and there will be no more radical laws made.
—President.

Road D.—There has been no reckless state law making in this territory, nor is there liable to be.
—Assistant General Manager.

Road E.—The tendency of future railway laws we believe will be conservative rather than radical.
—Vice-President.

Road F.—Think the reckless law making will be stopped as to creation of new laws, but there is a good deal of inertia regarding the old ones, and the activity of the legislatures ought now to be directed to repealing most of the legislation of the past few years.
—President.

Road G.—I do not think there will be any more harm done in the near future by reckless state law making in our state as I am inclined to think that the public in general as well as the legislature has had a good lesson, and I believe the tendency is rather to favor railway operations at this time than otherwise.
—President.

South—Answers to Question 7.

Road A.—This is a pretty hard question and one that I have not satisfied myself upon. There is no question about the present temper of the people, but I have my doubts as to continuation of the present calm when business returns to the peak load for the railways, and freight becomes congested, causing delays, damages and annoyance to people. This must, of course, to a greater or less degree occur, when we have our full load and more. I think our troubles will be felt more during that period through juries than with the law makers. I think we will have a rest from radical law making for some time, although we may expect an occasional break-loose by some individual party or parties in our state legislatures, and it is not improbable that the same may occur in our national legislature. I think good effect, however, will be felt for a long period.
—General Manager.

Road B.—There will be more foolish laws passed in Arkansas, but not of such an extremely virulent character as in the past.
—President.

Road C.—I anticipate that in this section (Florida) we will have further radical law, and I do not think the crisis has fully passed.
—General Manager.

Road D.—We look for conservative action in Louisiana during the coming year.
—President.

Road E.—My opinion is that the future will show a tendency towards conservatism in the matter of legislation, both federal and state, as applied to corporations.
—President.

Road F.—We do not believe that there will be any reckless state law making in our territory in the near future. In fact, the last session of the Mississippi legislature was inclined to treat the railways more fairly than in the past. There were a few unreasonable members that were ready to jump on the railway, as well as other corporations, on the least probable provocation, and in some cases on no provocation at all; but we believe the financial depression has done much to bring about a realization of the fact that an antagonistic feeling toward the railways would most undoubtedly tend to still further depress, rather than aid. Local feeling in our territory is less antagonistic to railway and other corporations than a year ago, and we believe that there is kindlier feeling toward same.
—Vice-President.

Road G.—In my opinion a reaction against the anti-railway legislation has set in and that the tendency now will be for the conservative laws rather than radical ones. (Alabama.)
—President.

Road H.—We believe that reckless law making has, for a time, at least, run its course.
—General Manager.

Road I.—I do not look for as much reckless law making by the state legislatures in this immediate neighborhood for the next few years. The tendency among the business men and also the high class agriculturists is that enough agitation has been had up to this time, and that a more sane and safe course will be pursued in the future.
—General Manager.

Southwest—Answers to Question 7.

Road A.—We have been preaching the slogan of "fewer laws and better laws," and there is unquestionably a decided change in the sentiment of the people toward corporations in this state. We hope for saner and safer legislation.
—Vice-President.

Road B.—While the demagogue has not been as noisy recently as heretofore, his power for evil still exists, and other drastic legislation can be anticipated unless strongly outspoken public opinion declares to the contrary. (Texas.)
—Vice-President.

Road C.—It is our opinion that the people are growing more conservative, as they are becoming more thoroughly informed, and that there is less liability of reckless state law making in our territory; this, in our opinion, will apply to the whole country.
—Vice-President.

Road D.—If I hadn't been advised that our Governor had threatened to have a bill introduced and passed reducing passenger tariff 33½ per cent., and if I didn't know that the "farmers, merchants, lawyers, doctors, preachers" and others, who would derive absolutely no benefit by a reduction, on the contrary be the means of working against their interests in reducing the earnings of transportation lines for the benefit of foreigners and outside agencies, by petitioning the railway commission for a reduction in the freight rate on cotton to the extent of 20 per cent., I would say that I don't think there will be much more harm done in the near future by reckless law making in our territory.
—Vice-President.

Road E.—I think that the crisis of reckless state law making in our country has passed. The "fewer laws and better laws" movement in Texas has taken hold, and I believe we will see some decided improvements during the session of the thirty-first legislature, which convenes during the year. I believe that the conservative members who were elected during the year will advocate amendments to the more radical laws that will make them satisfactory to capital interest.
—General Superintendent.

West—Answers to Question 7.

Road A.—Things do not look promising.
—President.

Road B.—More conservative in the future.
—President.

Road C.—Do not look for any reckless state law making in

this territory in near future, and am of opinion that the tendency will be for conservative laws rather than radical ones.
—General Superintendent.

Road D.—I do not anticipate any serious harm from reckless law making in this section, except in order quite materially to increase taxation. The disposition seems to be to make the railways bear as large a proportion of that as is possible.
—President.

Road E.—The action of the past six months of the state railway commission would certainly give the impression that no radical changes are contemplated by it against the railways of this state. My judgment is that the recent embarrassing business conditions has been an object lesson that will have its effect in defeating any radical laws that may be presented for the consideration of this winter's legislature. (Nevada.)
—Vice-President.

Road F.—It is very difficult to predict what action the railway commissions in Oregon and Washington will take during 1909. They are agitating rate reductions in both states which will seriously affect revenues, and the matter will probably have to be fought out in the courts; with what results it is impossible to state.
—Vice-President.

Transcontinental and Pacific—Answers to Question 7.

Road A.—There is a general lessening of the hostility to railways throughout the western territory and a return to the belief that legislation in the direction of repression may have gone too far. This is most marked in the newer states which passed laws resulting in the absolute cessation of railway construction and consequent needed development. But during the last two years radical men have been appointed to office and these men have not yet fully learned that public opinion has changed or is changing except so far as they have learned it by being rebuked by the courts. It would be too much to say that the change in popular sentiment has as yet resulted in modification of actual oppressive laws, but there is a greater disposition to stop and think twice before issuing stringent orders.
—President.

Road B.—My impression is that there will be less reckless state law making in the states from the Great Lakes to the Pacific ocean.
—President.

Road C.—It is difficult to tell what will be done but the tendency is more conservative. We are hopeful that will continue as the necessity for it is great.
—Vice-President.

Road D.—More conservative.
—Vice-President.

Road E.—Nothing short of omniscience could answer whether there will be any more harm done by reckless legislation. We are convinced, however, that a much better understanding exists to-day between the public and the carriers than has ever previously existed. Much has been done in the way of educating and informing the public as to the difficulties confronting the carriers; a review of the attitude of the newspapers published in territory traversed by our lines, reflecting as they do the state of public opinion, shows that one year ago over 26 per cent. were rabidly anti-corporation and anti-railway, whereas, now, the percentage is about 11 per cent.

As an evidence of the state of public opinion, the Illinois Manufacturers' Association recently passed a resolution which, among other things, requested:

"All senators and representatives of Illinois in the national and state legislatures to discourage all measures having a tendency to continue or aggravate the agitation against corporate interests and to support all legislation, which without injury to their own constituents will tend to allay the hostility toward business conducted under corporate form."

We are, therefore, hopeful for the future.
—Vice-President.

Road F.—I believe the era of reckless state law making is past and that the tendency now will be for conservative laws rather than radical ones.
—President.

QUESTION 8—IS LOCAL POPULAR FEELING IN YOUR TERRITORY MORE OR LESS ANTI-RAILWAY AND ANTI-CORPORATION THAN IT WAS LAST DECEMBER? DO YOU SEE ANY SIGNS OF REACTION TOWARDS A KINDLIER FEELING?

Central West and Trunk Lines—Answers to Question 8.

Road A.—Apparently the public is coming to understand to some extent that anti-railway and anti-corporation legislation has been based more upon political than upon other

necessities, and I think a good many of our citizens are coming to understand that what they really need is more and better railways and rates that will warrant new construction as well as additions and betterments. —Vice-President.

Road B.—It is difficult at this time to place any estimate upon the popular feeling in this territory as to anti-railway and anti-corporation laws. We have thought at times that we should see a reaction towards a kindlier tone, and we are inclined to believe after all that there may be some improvement in this respect. —President.

Road C.—There is less hostility. —President.

Road D.—Popular feeling is now favoring railways more than it did a year ago. The public better understands that there is a limitation to the drastic applications to the railways. —General Manager.

Road E.—I believe there is to-day a greater feeling of toleration among all interested in transportation than was the case last year. —Vice-President.

Road F.—Anti-railway legislation is not as popular as it was a year ago. —Vice-President.

Road G.—Anti-railway hostility shows signs of waning. —President.

Road H.—Popular feeling in our territory is certainly less hostile to railways and corporations than it was last year at this time. The feeling could hardly be characterized as friendly, but it is now more disposed to listen to the argument of the "other fellow." Some of the more conservative newspapers have within the last few months changed their tone and now seem to be endeavoring to bring about a fairer state of public mind toward the railways. I believe the work of railway business, however, and of the Railway Employees' and Investors' Association is bound to produce good results in educating public opinion. —President.

Road I.—Our opinion is that local popular feeling is less anti-railway and anti-corporation than last December, although it is hardly to be assumed that the feeling is enough kindlier to influence favorable legislation. While the feeling of animosity has sensibly decreased, the friendliness or desire for reversal of previous actions is not sufficient to be of much effect within the next 12 months. —Receiver.

Road J.—The local popular feeling in our territory is much more favorable, but there still remains a tendency among members of the legislature to gain notoriety by display of animosity toward all corporate wealth. —President.

Road K.—I think the fire has burned out, although the anti-railway feeling here was more a reflected one than of direct origin. I found the source of many of the grievances against railways to be those given in the newspapers. I have found men engaged in work-a-day employment, i.e., men working by the day in shops and factories and stores, with grievances against railways who had never shipped a pound of freight, and seldom ridden on railway cars except on excursion rates. I have also observed that many of the traveling men I have met on railway trains with grievances against the railways would recite verbatim the newspaper articles that I had read the day before. In other words, if the newspapers were to state from day to day that the railways were doing all in their power to serve the public, that their rates were reasonable, and that their passenger trains were comfortable, the first man you meet on the street would tell you the same thing. Our clever law makers keep very close to the feelings of their constituents, and many of them have made their careers at home through their hostile attitude towards the railways at the state capitols. I believe they feel they have worked the game to the limit, and now will let the pendulum swing the other way. —Vice-President.

Road L.—There are signs of reaction towards railways and corporations, except when they go before a jury. —General Manager.

Road M.—The local popular feeling in our territory is less anti-railway or anti-corporation than it was last December, and I see marked signs of reaction towards a kindlier feeling. —President.

Road N.—We believe there is a fuller realization of the necessity for large corporations to handle the first industry of this country and of the close relationship that exists between the well-being of the railways and the prosperity of

the nation. With the national and state elections over, the incentive for pernicious agitation is to some extent removed, and the general desire seems to be to get back to work. —Receiver.

East—Answers to Question 8.

Road A.—It would seem from all that can be gathered as to the present temper of popular feeling in the territory through which this line runs that there is very much less anti-railway and anti-corporation feeling than existed last December, or for some years. There certainly seems to be good signs of a reaction and a much kindlier attitude of the public in general and the politicians in particular than has existed for some time. —President.

Road B.—Popular feeling continues to be more or less antagonistic to railways and other corporations, but the business depression has had a salutary effect and we believe that sentiment generally is in this particular improving. —President.

Road C.—There is some marked improvement but it is not general. However, there is a reaction under way. —President.

Road D.—It is known that there is a more friendly attitude toward this particular railway, and it is believed that the general attitude of the public, and particularly of the intelligent working class, toward railways has been educated to a better understanding of the relationship that the prosperity of the railway bears to the prosperity of the country. —Assistant General Manager.

Road E.—There is an apparent reaction towards a kindlier feeling. —Vice-President.

Road F.—Local popular feeling is less hostile. There are signs of a reaction. —President.

Road G.—Local popular feeling in our territory against railways and other corporations is less than last year. —President.

South—Answers to Question 8.

Road A.—Very much less. —General Manager.

Road B.—Hostility is less. There are indications of a kindlier feeling. —President.

Road C.—The local feeling in our territory is, I might say, slightly less anti-railway and anti-corporation. The reaction, if any, is slow. —President.

Road D.—Local feeling towards railways in our territory is very kindly and the people are disposed to encourage railway construction and new enterprises in every way possible. —President.

Road E.—I think the popular feeling in our territory is less antagonistic to railways and corporations than it was a year ago, and there are evidences of a reaction towards a better feeling—one of harmony and of realization that the prosperity of the railway and corporation is closely allied to prosperity at large. —President.

Road F.—The local popular feeling in our territory is less anti-railway and anti-corporation than it was a year ago, and there is a reaction towards kindlier relations. —President.

Road G.—There is very little if any change in the business feeling in this section against railways and corporations generally from last December, and I see no marked signs of reaction towards a kindlier feeling. (Maryland). —General Manager.

Road H.—Local popular feeling is very decidedly less anti-railway and anti-corporation than it was a year ago. There has been a decided reaction towards a kindlier feeling. As an illustration of this point, I may mention the fact that steam railways had been forced by the state of Alabama and other southern states to reduce passenger rates. To be consistent representatives of these railways proposed to the legislature of Mississippi that a corresponding reduction be made in that state, but the members of the Mississippi legislature by a large majority declined to accept this sacrifice, and stated that the people of the state of Mississippi would not be carried off their feet by the public clamor in favor of anti-railway laws. They desired efficiency of service and not reckless reduction of transportation rates. —General Manager.

Road I.—The popular feeling in our territory seems to be

less anti-railway than it was last December, and a better feeling and a closer relationship seems to be coming between railways and the public at large.

—General Manager.

Southwest—Answers to Question 8.

Road A.—In my judgment the hostility is decidedly less.

—Vice-President.

Road B.—Local popular feeling is much less anti-railway and anti-corporation than it was last. The great difficulty, however, is to get popular opinion to express itself so that politicians and demagogues will give heed.

—Vice-President.

Road C.—I think I see signs of reaction towards a kindlier feeling in our territory. There are not so many personal injury suits brought, but I do not see that it has had any effect on the verdicts of juries when personal injury suits are brought, nor do I see that it has had any effect on the Court of Appeals when a case reaches that tribunal, nor the Supreme Court when it is carried up to that last resort.

—Vice-President.

Road D.—Local popular feeling in our territory is less anti-railway and anti-corporation than it was last December.

—General Superintendent.

West—Answers to Question 8.

Road A.—There is little difference from last year. (Minnesota.)

—President.

Road B.—There is much kindlier feeling. (North Dakota.)

—President.

Road C.—There seems to be a much kindlier feeling towards railways and other corporations than there was a year ago.

—General Superintendent.

Road D.—I do not think the anti-railway or anti-corporation feeling has increased during the past year, and I am rather inclined to think it has decreased a little. (Idaho.)

—President.

Road E.—Local popular feeling in this territory last December was strongly anti-railway and anti-corporation. We notice that the more rabid have changed front very materially and a general reaction towards a general and more thorough understanding as to the right of the public vs. corporations is manifested in the interests of both. (Nevada.)

—Vice-President.

Road F.—The local popular feeling is very much improved over a year ago, and it is less anti-railway and anti-corporation. I believe this condition will continue to improve. (Oregon.)

—Vice-President.

Transcontinental and Pacific—Answers to Question 8.

Road A.—The general feeling in our territory is less opposed to railways and to corporations than it was last December. The sensible business people are waking up to the fact that they cannot have good railways and good railway service without reasonable laws and co-operation.

—President.

Road B.—The popular local feeling is more friendly, but the antagonistic feeling is not yet extinguished.

—Vice-President.

Road C.—There are signs of reaction—at least there is much less talk and agitation.

—President.

Road D.—I believe the feeling in our territory is less anti-railway and anti-corporation than it was last December.

—President.

QUESTION 9—WHAT IS YOUR ESTIMATE OF THE WORK WHICH THE INTERSTATE COMMERCE COMMISSION IS DOING UNDER THE NEW LAWS?

Central West and Trunk Lines—Answers to Question 9.

Road A.—I find it difficult to answer your inquiry. The effect of the law and the work of the commission has been to add very greatly to the cost of operation, but I do not think there is any warrant for saying that such results have come from intention. In the matter of rate publications the carriers have been involved in tremendous unnecessary expense, but the commission has recently shown that it appreciates that fact, and its later rulings have been more practicable.

—Vice-President.

Road B.—The work which the commission has been doing under the new laws has not been of great service to the com-

munity, but in many respects I believe it has been a hindrance rather than a help to the business as a whole. Generally, however, we must admit that the company has been benefited rather than harmed by the recent congressional rate legislation.

—Vice-President.

Road C.—I believe the work of the commission has been for good in general. After some of the sore spots have been rubbed out, the general average of benefits, both to railways and to the public, will be to the credit of the commission.

—General Manager.

Road D.—I believe the work which the commission is doing is for good, and that, while the manner of bringing about the changes was unnecessarily severe, the results will be satisfactory. No one can maintain that publicity and proper supervision of the handling of earnings and expenses of railway properties are not good things for the investor in, and the managements of, the railways. The trouble is not with the Interstate Commerce Commission; it is rather with the numerous state commissions, and entire satisfaction will not be given to all interested until a commission is placed in charge of the entire transportation business throughout the country. Such a commission should be organized, I believe, by selecting a representative from each state—the position to be either elective or appointive—and one commissioner at large, representing the Federal government. This commission should meet at Washington, pass upon such rules and regulations as might be necessary, and upon adjournment, the members could return home, and each, as chairman of the local commission, regulate the railway affairs of the state, in accordance with the general policy laid down at the general session. By such a plan, each state would have its local commission, presided over, and under the control of, a representative of the Interstate Commerce Commission. However, the local commission should have no authority to legislate or pass rulings that would not be in conformity with the policies outlined by the commission in convention. By this arrangement there would be but one commission and one general policy to be observed; and yet the local interests of each state would be fully served and general satisfaction would result. The reason for providing for the local commissions is that the transportation business of this country is too great to be properly handled from any one point, such as Washington, D. C., and in order to get the best results, the questions to be considered should be handled by persons familiar with the conditions to be encountered, and such persons only should constitute the local commissions.

—Vice-President.

Road E.—I think the work of the commission has been as fair under the new law as it would be possible for that board of men, coming into the business unprepared to make it.

—Vice-President.

Road F.—Undoubtedly the commission makes unfair practices impossible but the reports and statistics required have entailed increased expense in the accounting and traffic departments.

—President.

Road G.—The work of the commission is a difficult one to perform, as the questions dealt with are not only highly technical, but require an immense amount of study. Furthermore, the commission has somewhat contradictory functions. Its most important function is, as a judicial body, to represent all classes of citizens (not simply the shipping public, but all citizens), even those who are connected with the railways. In addition to this, it has immensely important administrative duties, promulgating orders, over-seeing the operation of the Safety Appliance Law, and other laws. Last, but not least, it has an important function as a prosecuting body. It is not to be wondered at that it is next to impossible to find seven men who are capable of performing these very different duties, and there is no doubt that railways have suffered to some extent by reason of the fact that the commission is over-worked, and that few of the very important questions can be considered by the entire commission sitting as a court.

—President.

Road H.—We feel that the work of the commission is in the line of progress and ultimate material benefit to railway properties and the interests of the people at large. Some details of the work would appear as burdensome and wholly unnecessary, and some restrictions of the freedom of action

we consider of temporary harm, but as a broad proposition the general work of the commission is beneficial and as further experience is gained by them we believe much ultimate benefit will result.

—Receiver.

Road I.—While I believe the commission has accomplished some good, it seems to me it is assuming too much arbitrary power and is interfering with details, so that it is producing and will continue to produce more harm than good.

—President.

Road J.—I believe the commission is doing its best to put the law into actual operation, so that all may judge whether the result therefrom will be beneficial or otherwise.

—Vice-President.

Road K.—In my opinion the commission is attempting entirely too much, and the passage of the hours of service law was a great mistake. It has done financial harm to all our interests and moral harm to many railway employees, and has benefited absolutely no one.

—General Manager.

Road L.—The commission is conservatively endeavoring to carry out the new laws.

—President.

Road M.—The work undertaken by the commission is of such great scope that it is hardly possible at this time to intelligently forecast the results likely to be accomplished. The commission is composed of able and fair-minded men, and we believe they have been impressed with the fact that present railway managements are willing and anxious to co-operate with them in their work. The principles upon which they are working to secure uniformity in methods of accounting and practice, the elimination of discrimination, and the adjustment of differences between the shippers and the railways, are based upon sound principles and in the end should be productive of much good. In all controversies there is much to be said on both sides, and the present attitude of the commission leads to the belief that it will be a tribunal where such differences will be adjusted to the common good of all. When conditions are better understood there will, no doubt, be revisions in the present laws which will place the commission in its logical position, and where it will be able to secure the best results.

—Receiver.

East—Answers to Question 9.

Road A.—The work which the commission is accomplishing under the new laws is, generally speaking, fair and just towards the railways and such as should commend itself to the people of this country. While some decisions have been made that are of questionable legality and of far-reaching consequence to the carriers of the country if they are sustained by the courts, these decisions are not so many, nor do they indicate a spirit on the part of the commission at all antagonistic to the railway interests of the country generally, or such as should lead the railways to feel that the administration of the Interstate Commerce Act by the commission is in the hands of men who are hostile or unfriendly to the railways of the country.

—President.

Road B.—The Interstate Commerce Commission has found it necessary to do so much work in clearing the ground and preparing for proper interpretations of the comparatively new Interstate Commerce Law that it seems to have as yet done very little that can be considered harmful to any business interest, and we are of opinion that when the new law comes to be fully understood, its effect, upon the whole, will not be disastrous to the railway interests of the country, but this will of course depend most largely upon the wisdom exercised by the commission in its interpretation of the law. There appears, however, to be no evidence that the commission intends to deal unfairly or improperly with any part of the matter.

—President.

Road C.—The commission appears to be doing good work on the whole, and we have no complaints to make so far as treatment of this line is concerned.

—Vice-President.

Road D.—The effect of the commission has been to disorganize the conduct of business and to add greatly to the labor of the clerical department.

—President.

Road E.—The Interstate Commerce Commission is not calculated to improve the situation. The commission is trying to administer the affairs of the railways and not to regulate them. It cannot do so and will fail. The law will be modified before the railways return to real prosperity.

—President.

South—Answers to Question 9.

Road A.—The work being done by the Interstate Commerce Commission involves a great expense upon the railways and the public without a corresponding benefit to the shipper. The system is top heavy and will have to be simplified.

—President.

Road B.—As a whole I think the Interstate Commerce Commission is the most conservative and fair body connected with the adjustment of railway rates. At times, however, the commission has been unfair to railways and has done harm in certain local territories.

—General Manager.

Road C.—The value of the work of the Interstate Commerce Commission under the recent laws cannot well be estimated or criticized yet.

—President.

Road D.—My estimate is that on the whole the commission is taking a very broad and liberal view of the questions presented to it. I think its intentions are good and that any mistake in judgment which it makes can always be redressed by having recourse to the courts.

—President.

Road E.—Our opinion in regard to the work of the Interstate Commission is that some of the laws are just but that others, while perhaps necessary, are very much of a burden to the railways by reason of making extra employees necessary, requiring additional printing, etc.

—Vice-President.

Road F.—Our estimate is that the work of the Interstate Commission, generally speaking, is of benefit to the railways.

—General Manager.

Road G.—I believe that the work that is being done by the commission, while to a certain extent burdened with red tape, is productive of lots of good. The people at large have confidence in the work that is being done, and the railways themselves I believe are feeling that a certain amount of responsibility is being taken from their shoulders. I believe that the greatest amount of good comes from the feeling of the public that no special favors are being granted by the railways to individuals or corporations that are not enjoyed by all.

—General Manager.

Southwest—Answers to Question 9.

Road A.—The work of the Interstate Commission has been helpful to the railway interests as a whole.

—Vice-President.

Road B.—I believe that the intent of the Interstate Commerce Commission is a very good thing. I believe the commission has been mistaken in some of its rulings and interpretations, but I believe this is more a lack of knowledge of conditions than a desire to do harm.

—General Superintendent.

West—Answers to Question 9.

Road A.—I think the work which the Interstate Commerce Commission is doing under the new laws is very poor.

—President.

Road B.—I think the work of the commission under the new laws is beneficial.

—Superintendent.

Road C.—I think the Interstate Commission, while it has caused us a lot of trouble, is, on the whole, a good thing, and I believe it is the only solution of the prospective difficulties between the mass of the people and the railway corporations. In other words, I think it better to have the national government control these things than to have it attempted by state legislation. I believe it is impossible to get two commissions with ideas near enough together to give rulings under which a railway operating in two or more states could possibly do business.

—President.

Road D.—We estimate the work of the Interstate Commission under the new laws as a whole as being greatly beneficial alike to railways and their patrons.

—Vice-President.

Transcontinental and Pacific—Answers to Question 9.

Road A.—Taken as a whole, the present interstate commerce law is beneficial in its working rather than otherwise. Whether or not it will continue to be so depends on its administration by the commission. The latter body needs strengthening but is unquestionably earnest and doing the best that it can as now constituted. I believe there is danger

in the vast powers which it possesses and am strongly of the opinion that there should be two bodies, one judicial and one administrative as advocated, I believe, by a majority of the commissioners.

—President.

Road B.—The work of the commission has been generally satisfactory. It seems to be conducted upon a satisfactory business basis along national lines.

—Vice-President.

Road C.—I think the commission is attempting to stretch the line and to apply it where it is not applicable—to independent steamship companies, for instance.

—Vice-President.

Road D.—We think the Interstate Commerce Commission has been very fair, except in the interpretation of the Safety Appliance Acts, wherein practical impossibilities are expected of carriers. Our experience with our own inspectors shows that without calm and unprejudiced supervision they can do a vast amount of harm. If they are guided by strained and harsh interpretations of specifications, they may actually paralyze action. We think a condition somewhat similar to that outlined above prevails with the Interstate Commerce Commission inspectors, and that with reasonable and fair instructions from their superior officers many of the troubles that the carriers now experience would disappear, and that without violation of any legal requirement.

—Vice-President.

Road E.—I believe the work as a whole being done by the Interstate Commission is all right, but it has a enormous task. I believe results will show improvement as time goes on. I believe that more harm has been done by radical state railway legislation and state railway commissions than by the Interstate Commerce Commission.

—President.

QUESTION 10—ARE THE STATE COMMISSIONS IN YOUR TERRITORY DISPOSED TO BE FAIR OR UNFAIR AND ARE THEY BECOMING MORE CONSERVATIVE OR MORE RADICAL AS TIME GOES ON?

Central West and Trunk Lines—Answers to Question 10.

Road A.—It is hardly possible to answer this question, where, as in our case, the application is to serve different states having commissions of different capacities and disposition.

—Vice-President.

Road B.—I believe the state laws prohibit any one qualified by experience from going on a railway commission, and the result, aside from disposition or political requirements, necessarily includes many mistakes that are embarrassing for the carriers and unfortunate for the public.

—Vice-President.

Road C.—The state commissions in our territory are disposed to be quite fair. The gentlemen composing these bodies are thoughtful, intelligent and conservative men.

—President.

Road D.—The state commissions are disposed to be fair and they are becoming more conservative.

—Vice-President.

Road E.—We operate through six states and in most of them we have not been greatly embarrassed by the state commissions. They have thus far not exercised generally unfair power as in most cases they have the apparent right to do. We have been able to keep in close touch with them in a friendly free manner and by reasonable presentation of our side of the question cannot complain that in actual application they have been unreasonable generally speaking. On some points, of course, we have differed, but under the circumstances we feel reasonably satisfied with them.

—Vice-President.

Road F.—I consider the state commission, if properly managed, a good thing for all concerned, but when there is an interstate commission working in conflict with one, two, three or ten state commissions, results are far from being satisfactory.

—Vice-President.

Road G.—The state commissions in our territory try to be fair and are quite conservative, and if the railways will be fair with them and give them correct information, I do not think they will have any trouble, although I believe that the dual commission system is bad in principle and that we should have one federal commission.

—Vice-President.

Road H.—The attitude of the state commissioners in our

territory continues to be generally fair. During the recent anti-railway agitation these commissions were usually the least radical of any of the state bodies which had to do with railways. I think the tendency is, as they become more familiar with the problems that confront the railways, for them to handle such matters in a broader manner. Our experience has been that the longer a commissioner has served the greater consideration he shows in dealing with the railways.

—President.

Road I.—State commissions are disposed to be fair and we look for more conservative treatment as experience is gained by the commissions, and believe that the experience being gained will prompt the appointive power to place more practical and experienced men on the state commissions which will tend to make them more efficient and of more benefit to the railways and the public, and that as they gain experience they will tend to follow more closely the spirits and methods of the Interstate Commerce Commission, thus decreasing objectionable radicalism.

—Receiver.

Road J.—The state of Virginia has a railway commission composed of three members, all of whom are high grade, conservative men, and, so far as I know, all of their actions have been prompted and governed by fairness and justice. The state of West Virginia has never had a railway commission, though an effort will probably be made at the next session of the legislature in January to create such a commission, which will, I think, result favorably to the railways if proper men are selected, but should political motives govern, the results will be unfavorable.

—President.

Road K.—I believe that our state commission is disposed to be fair to the railways. I have not had occasion to meet with the commissions in adjoining states, but I have no complaint to make of the Illinois commission.

—Vice-President.

Road L.—The state commissions in our territory are disposed to be fair. I have never considered them radical, but on the contrary conservative.

—President.

Road M.—We have had considerable dealings with the railway commission of Ohio, and while it is governed by the existing laws under which it works, we have at all times found it disposed to be fair, and to give due consideration to all circumstances surrounding any particular case, in an honest endeavor to secure the exact facts in each case and render decision without bias. The great benefit to be derived, both from the work of the Interstate Commerce Commission and the various state commissions, is that it will bring about a fuller understanding of the great problem of transportation and make it possible for railways to secure a fair and impartial hearing in any case that may be brought against them. If it were possible to entirely eliminate politics from the consideration of these questions, placing the various commissions upon the same plane as the Supreme Court, the railways would have little to fear and much to expect from the deliberations of these bodies.

—Receiver.

East—Answers to Question 10.

Road A.—Generally speaking, the attitude and action of the state commissions in the territory through which this line runs are not essentially different from that of the Interstate Commerce Commission, as outlined above. It cannot be said, however, from what has transpired during the last year, that these state commissions are becoming more conservative, and, on the other hand, it cannot be claimed that they are growing more radical or extreme in their action. It appears, however, as though their tendency is all the time to undertake to regulate the railways more and more in the details of their operations, a course of action which it would seem from every standpoint it would be unwise for the commission to pursue, as by so doing the result must ultimately be to load themselves up with a lot of unimportant detail work which they never can handle to the satisfaction of themselves or the public, and thus make it impossible to give the more important and far-reaching questions in which the public and the railways are interested the time required to investigate them with the care and attention which their importance demands.

—President.

Road B.—State commissions in this section of the country have always been most reasonable and conservative in their interpretation of the law and of the relations that existed

between the railways and the public. We have no reason to suppose that this satisfactory condition will be changed materially.

—President.

Road C.—The state railway commission in this state, so far as it has gone, seems to be very fair. However, this commission is less than a year old and hence has not been organized long enough to outline its policy. (Pennsylvania.)

—President.

Road D.—We have found these state commissions to be extremely fair. They are largely composed of men without experience in railway management and training and they have made mistakes. But their position has on the whole been consistently conservative.

—Vice-President.

Road E.—We have found the state commissions unfair. They are playing politics.

—President.

Road F.—The state commissions are more conservative than they used to be and they are trying to co-operate, though they are still radical to a greater or less degree.

—President.

Road G.—The state commissions are eminently fair. The commission in this state (Massachusetts) is the oldest of the state commissions; its powers are but regulatory. Its members serve usually through long periods and therefore become experienced and with experience conservative. There is no reason to expect any change in this attitude.

—Assistant General Manager.

South—Answers to Question 10.

Road A.—A state commission is but chaff, and is wafted on the winds of public opinion. Personally the commissioners are always inclined to be as fair as they know how, but they are inexperienced, unfamiliar with the railway situation and always fighting for the job at the next election so that no railway man can form a conclusion as to what he may expect six or twelve months hence. Right now, there is a calm.

—General Manager.

Road B.—The state commissions are as bad as they can be. (Arkansas.)

—General Manager.

Road C.—The state commission has been extremely drastic and unfair during the last year, and I hardly care to venture an opinion on its course for the coming year; however, it is barely possible that the situation from this standpoint has slightly improved during the last 12 months. (Florida.)

—General Manager.

Road D.—The state commission in Louisiana is well disposed and inclined to be conservative, but in common with the commissions of other states, it needs experience, and until this is attained the railways must suffer more or less in consequence.

—President.

Road E.—State commissions in our territory are disposed to be fair and I think as time goes on they are becoming more conservative.

—President.

Road F.—The state commission in this territory (Alabama) was appointed during the anti-railway administration, and it felt charged with the duty of correcting abuses which were believed to exist on the railways. It is my opinion that the reaction in public opinion will have a certain effect on the attitude of the commission.

—President.

Road G.—The state commissions in our territory are becoming more conservative and are showing greater disposition to be fair in their relationship with the railways.

—General Manager.

Road H.—The state commission of Louisiana is very fair and conservative; the Arkansas commission is inclined to be a little radical and is very closely allied with political affiliations, which makes its judgment biased at times; however, I believe the outcome of the present litigation between the railways and the railway commission of the state will result in a mutual understanding that will be beneficial for all parties concerned.

—General Manager.

Southwest—Answers to Question 10.

Road A.—The Texas commission has been disposed to be fair and is becoming more and more conservative.

—Vice-President.

Road B.—State railway commissions are disposed to be unfair to the railways. Their idea of regulating rates seems

to be invariably to reduce them, at the same time issuing many orders to railway companies which require increased expense. These commissions are becoming more radical as time goes on, and while their powers are already extensive, they appeal to every successive legislature to still further increase them. The principal trouble with commissions regulating railways is that, with few exceptions, none of their members are men who have had any experience or knowledge, save of the most superficial kind, concerning the intricate questions of railway operations which they are called upon to regulate.

—Vice-President.

Road C.—We believe that all commissions are more disposed to be fair and just than heretofore. This is largely being brought about by the more liberal education as to true conditions and the growing opinion to deal fairly and justly.

—Vice-President.

Road D.—I believe our state commissioners (Texas) are disposed to be as fair as they think their constituents will submit them to be, and they are becoming more conservative and less radical as they become better acquainted with the duties of the office to which they are elected, and more familiar with the affairs of the railway companies, gleaned from a personal inspection of the property in company with the managing officers of them.

—Vice-President.

Road E.—I could write a book on the Texas commission! I believe that the longer any railway commission remains in office the less harmful it is to railway interests.

—General Superintendent.

West—Answers to Question 10.

Road A.—I think the state commissions try to be fair but ignorant laws and public opinion gives them little chance to exercise leniency. (Minnesota.)

—President.

Road B.—The state commissions are becoming more conservative. (North Dakota.)

—President.

Road C.—The commission of this state seems to be fair and reasonable. (Montana.)

—General Superintendent.

Road D.—The Nevada commission cannot be said to be thoroughly fair to the railways of the state, and we think its unfairness is probably caused by the reason that it came into being through channels that were more or less inoculated with the anti-corporation sentiment. The commissioners necessarily feel that some public action must be forthcoming to convince the public that their exists a necessity for the proper protection of the rights of railway patrons. Nevada being sparsely settled is served by few purely local roads and it emphasizes the fact that the commission came into existence at least 10 years ahead of any needs the state might have for its services.

—Vice-President.

Road E.—State railway commissions in this territory (Oregon) are unfair and are not disposed to handle cases which they prosecute on a business basis, but show a disposition to curry favor with the public so as to strengthen themselves with the people, with a view of having the commissions continued.

—Vice-President.

Transcontinental and Pacific—Answers to Question 10.

Road A.—The state commissions are of various sorts. Most of them are composed of men wholly without experience, elected or appointed because of their radical views and filled with the idea that continuance in office depends upon their ability to harass the railways in every possible way. It is to be remarked, however, that the longer they remain in office the more they realize the injustice of what is expected of them by the public and the more they come to see the railway side of the question, but only a few of them are courageous enough to act on their best judgment, and at present the only relief is by application to the Federal courts in which, because of the permanence of their office, there is some hope of getting justice.

—President.

Road B.—The state commissions in our territory are disposed to be fair and I think they are realizing the fact that attempting to manage railways is a very difficult task, and that this is tempering their judgment very materially.

—President.

Road C.—Some state commissions are fair and some unfair. It is impossible definitely to estimate what will occur.

—President.

Road D.—I think the work of the commissions is fair.

—Vice-President.

Road E.—We think the change in the attitude of the public towards corporations has already had some effect on the state commissions. We are optimistic and think as time goes on they will become quite as fair as the Interstate Commission.

—Vice-President.

Road F.—I believe our Nevada state commission is disposed to be fair, although it started out with what the railways considered a very unfair reduction in freight and passenger rates. This, however, was harmless because the roads tied their hands by injunction process.

—President.

BROWN FEED WATER HEATER FOR LOCOMOTIVES.

The Brown feed water heater, though a comparatively new invention, has been used on a Chicago, Milwaukee and St. Paul locomotive in a bad water district of South Dakota for 19 months without any engine failures or delays from leaks or other causes due to the heater. This application of feed water heater to locomotive practice was made by W. H. Brown

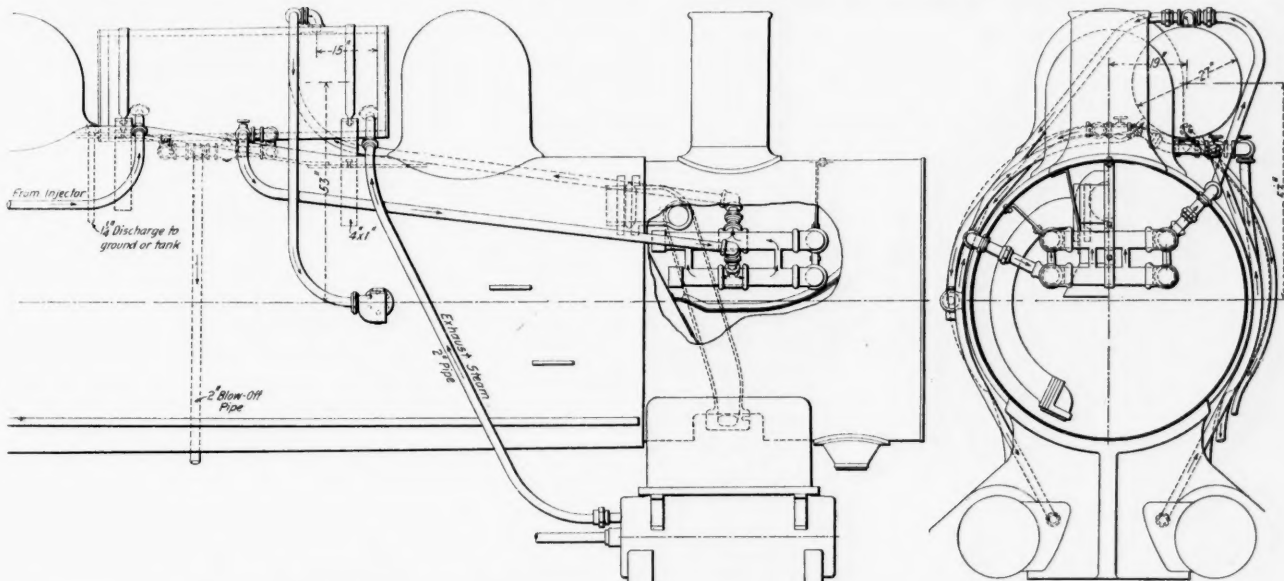
the drum. The steam passes through the tubes and is condensed by the circulating water, thus giving up its heat, the water of condensation being all returned to the tank through the left injector holes.

A water coil made of larger pipes is fitted in the smoke-box directly under the stack as shown in the illustration. The purpose of this coil is to produce a gentle circulation, separate the mud and purify the water. The heater drum and coil are supplied with blow-off cocks so that they can be washed out and kept free from mud. In the table below is a comparison of the performance for the month of February, 1908, of C. M. & St. P. engine 167 equipped with the Brown feed water heater and engine 88 of the same class without the heater:

Engine No.	Miles		Coal consumed.	Tonnage per train.	Coal per 100 ton-miles.
	Train.	Ton.			
Engine No. 88.....	844	473,800	141,900	561	29.95
Engine No. 167.....	1,278	834,300	191,400	653	22.94

It will be seen that engine 167 shows 34 per cent. more train miles, 14 per cent. greater tonnage and a saving of 24 per cent. in coal per 100 ton miles.

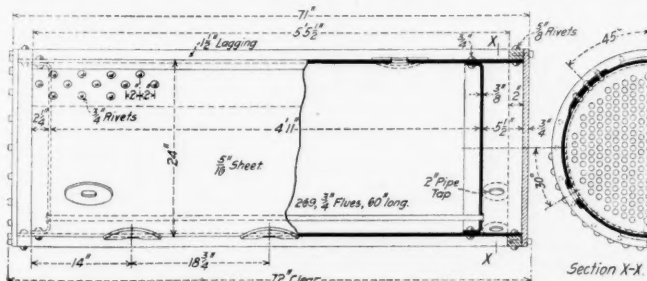
An interesting discovery was made in connection with the



General Plan of Brown Feed Water Heater Applied to C. M. & St. P. Locomotive.

of Minneapolis, Minn. The heater is now being put on three additional locomotives of the St. Paul, the illustration here-with showing the method of application. The Minneapolis & St. Louis is also applying it to ten locomotives and the Iowa Central is to equip a few for trial.

The heater consists of a drum about 6 ft. long and 27 in.



Drum of Brown Feed Water Heater.

in diameter, located on the top of the boiler, either in front of or behind the dome. The drum is fitted with tube plates set a short distance from each end and contains 269 tubes $\frac{3}{4}$ -in. in diameter and 60 in. long. The water from the injector passes into the heater and around the tubes. A portion of the exhaust is shunted from the exhaust cavity of both cylinders and carried by 2-in. pipes to the bulkhead in the front end of

use of artesian water, which caused foaming when fed to the boiler before heating, but when previously heated the gas was liberated and no foaming was experienced.

FOREIGN RAILWAY NOTES.

Locomotives with Schmidt-Garbe superheaters, which numbered 2,728 last February, had increased to 3,455 by the middle of October, 1,789 of which were on the Prussian State Railroads, and 428 in little Belgium. They are in use in all the principal European countries.

The coal production of Germany (the whole empire) in the first half of 1908 was 124,120,123 metric tons, which was 5.3 per cent. more than in the corresponding half of 1907. More than nine-tenths of this coal was from Prussian mines. The exports were 12,466,608 tons; the imports, 10,344,351.

If some genius will invent an effective elephant-catcher to attach to a locomotive, he will probably find interested attention at the offices of the Siamese railroads. Last June a freight train on its way to Bangkok ran into a full-grown wild elephant in the dark. The consequences were the derailment of two locomotives and of 14 cars and irreparable damage to the elephant.

General News Section.

The Michigan Central is using telephones for train despatching between Detroit and Jackson.

The Railway Commission of Canada has issued an order requiring the daily inspection of electric bells at all railway crossings.

The State Corporation Commission of Oklahoma has ordered the steam railways and street railways to send to the commission telegraphic reports of all serious accidents.

John J. Hannahan, Grand Master of the Brotherhood of Locomotive Firemen, has resigned his office to take the Vice-Presidency of the American Automatic Stoker Company of Chicago.

On the Southern Pacific lines west of El Paso, 252 track foremen received from the company just before Christmas each a present of a fat turkey. The recipients of these gifts appear to be chiefly those section masters who live on their sections remote from towns.

At New Rochelle, N. Y., last week Justice Keogh in the Supreme Court of New York, acting on a suit brought by the state against the Erie Railroad, sustained the law of the state passed last year limiting the working time of telegraphers to eight hours a day.

In 1907 the city of New York lost \$1,026,272 by running its municipal ferries. The Dock Department's net earnings in 1907, exclusive of the ferry expenses, were \$1,121,092, so that the large revenue which the department formerly returned to the city has been cut down almost to nothing.

Citizens of York county, Pennsylvania, residing along the line of the Pennsylvania's new freight railway, parallel to its main line, have petitioned the state railway commissioners to require the road to carry passengers, and also run local freight trains. In particular they want a milk train to Philadelphia.

The Nebraska Supreme Court in a case against the Omaha & Council Bluffs Railway Company, December 17, held that a pedestrian is not required to take the same care in crossing the tracks of a street railway as in crossing the tracks of a steam railway. The court said that this holding was at variance with decisions in other states, but that it regarded the distinction as proper.

Three railways in Michigan have come to the relief of the state treasury. Although railway taxes will not be due until April the railways preferred to have deposited in the hands of Attorney-General Bird for the relief of the state treasury \$750,000, which can be used to great advantage at this time. The road and the amounts advanced are: Michigan Central, \$400,000; Chicago & North Western, \$200,000, and Pere Marquette, \$150,000.

Representatives of the Missouri, Kansas & Texas and of the employees of that road have gone to Washington to lay before Messrs. Knapp and Neill a disagreement concerning wages to be paid during the coming year. Although Messrs. Knapp and Neill are ex-officio conciliators on behalf of the government, they are called upon in this case as individuals, the parties at difference having agreed to refer their questions to these two gentlemen.

A commission of postmasters and other officers of the Post-office department, reporting to the Postmaster-General, recommends that the pneumatic tubes now in use between main and branch offices in Boston, New York, Philadelphia, Chicago and St. Louis be continued under their present status; that is to say, that the government should not buy the tubes. The contracts under which the tubes are now used (for conveying mail matter) run for nearly eight years longer, and as the service appears to be still in experimental condition, five or six years hence will be soon enough for the government to think of acquiring ownership.

Conditions exacted by the city relative to a union pas-

senger station at Buffalo have resulted in the railways giving notice that they have abandoned the project. It was proposed to have a station at Fillmore avenue, on the extreme eastern outskirts of the city. No further consideration will be given until certain obstacles are removed. Chief among these is the requirement that the New York Central maintain a station at Exchange street, now occupied as a passenger terminal, and also what is known as the Terrace station. To this all the other roads are opposed, such an advantage being considered detrimental to their individual competitive interests. Thus end negotiations initiated by the city eight years ago.

Bolivian Railways.

The diplomatic question raised by the submission to Congress by the Bolivian government of proposals for a partial change in the route of the projected railways, previously determined by convention with Argentina, has been practically solved by an agreement embodied in a protocol indefinitely suspending the operation of this convention. The original plan provided for direct lines between La Paz and Buenos Ayres, with the object of bringing the two republics into closer commercial relations.

Dr. Eleodoro Villazon, Bolivian Minister at Buenos Ayres, has announced that the contracts between his government and the American syndicate headed by Speyer & Co. and the National City Bank of New York for the construction of various railways would be carried out with all possible speed.

This syndicate has already built a line from La Paz to Oruro, and as the gage of the new lines will be the same as that of the British line running from Oruro to Uyuni, which has a branch to Antofagasta, in Chili, the latter port will be in direct touch with the Bolivian railways. The roads to be constructed will place Northern Bolivia in closer communication with the Pacific ports when the Panama canal is opened. The contracts with Speyer & Co. and the National City Bank are now embodied in law, and two companies have been formed with a subscribed capital of \$27,500,000, contributed in almost equal proportions by the companies and the Bolivian government. Many Americans are engaged in the development of the mineral resources of Bolivia.—*Press Despatch*, Dec. 15.

Fifteen Passengers Killed in France.

A press despatch of December 16 from Limoges, France, reports a collision, followed by fire, in a tunnel between Limoges and Brive, resulting in the death of 15 persons and the injury of 30 others. Most of the victims were pinned beneath the wreckage and burned to death.

Railway Damage Suits in Texas.

N. A. Stedman, attorney for most of the railways in Texas, on December 6 issued a long statement about suits for personal injuries against the companies. From 1891 to 1903, Mr. Stedman said, personal injury payments made by Texas railways greatly increased. As a result of a campaign of education carried on by the roads these payments decreased from 1903 to 1906, but they advanced again during 1907 and 1908. Although the railway mileage in the state increased between 1891 and 1908 only one and one-half times and receipts from operation increased only two and one-fourth times, the personal injury payments for 1908 exceeded those for 1891 more than eight times. The payments in the fiscal year ended June 30, 1908, were \$1,800,000, equal to one-half of what it cost to run the Texas state government.

These payments are much larger per mile in Texas than elsewhere. Mr. Stedman gave the following figures: The Mis-

souri, Kansas & Texas of Texas paid \$248 per mile as against \$57.55 by the same road in Kansas. The Texas & Pacific in Texas paid \$160 per mile as against \$41 per mile for the same road in Arkansas and Louisiana. The Galveston, Harrisburg & San Antonio paid \$205 per mile as against \$74 paid by the Southern Pacific lines west of the Rio Grande. The Frisco paid in Texas \$191 per mile as against \$72 outside of Texas. The Gulf, Colorado & Santa Fe paid \$140 per mile as against \$53 by the Atchison lines outside of Texas. The train mileage of the lines outside of Texas is so much larger than that of the lines inside Texas with which they are compared that the amount of personal injury payments per mile should be less in Texas than outside.

The large amount of successful personal injury litigation against the railways of Texas is attributed to personal injury bureaus that systematically foment this kind of litigation, and whose success is largely due to the hostile public sentiment toward railways. Mr. Stedman in his letter appeals for a public sentiment more friendly to the roads, which, instead of causing juries to render unjust decisions against them, will enable them to put in jail the blackmailers who seek to prey upon them.

James O. Fagan.

Out of a signal tower in one of the dirtiest and most sordid of the suburbs of Boston James Fagan has come to the Harvard University lecture platform. President Eliot has selected him, and President Roosevelt has called him to the White House to discuss railway matters. The public over the whole of the United States is hearing of him and beginning to wonder what kind of a man he is.

Mr. Fagan is tall and thin, loosely built, but not awkward. On first seeing him one is attracted by the look of earnestness in his gray eyes, and one feels that this is a man who really believes in his work. He seems, indeed, more fitted to the lecture platform than to the signal tower, and it is hard to believe that for 22 years he has been pulling the shining levers in his little cage. Lacking the air which is generally attributed to the college professor, Fagan betrays a diffidence and a dislike to talk of himself which one scarcely expects to find in a man who is so much in the public eye. When he starts to talk on his favorite subject of railroading and railway problems, however, he is no longer diffident; his eyes light up, and he explains his views in a way that shows not only that he believes in them himself but that he also intends you to believe in them.

The little tower in which he has been working and thinking these 22 years is as dingy and unattractive as its surroundings and is no different from the hundreds of other railway signal towers scattered throughout the country. The steel levers, the clicking telegraph instrument, the dreary view up and down the tracks—the average student of economics would not consider these the most advantageous surroundings for mental effort, but here Fagan has learned enough about railway problems to qualify him as a lecturer in Harvard University. Eight hours a day of work in the tower and almost as much again of study in his little home in Waltham have made him one of the most remarkable men in this country to-day.—*New York Tribune*.

Meeting of Telegraph Superintendents at St. Paul.

The Western division of the Railway Telegraph Superintendents' Association held a meeting at St. Paul, Minn., December 14, with a large attendance. The members were entertained at the Transportation Club by Harry C. Hope, of St. Paul, Superintendent of Telegraph of the Chicago, St. Paul, Minneapolis & Omaha, and a former president of the association. Mr. Hope is president of the Transportation Club of St. Paul. The principal discussion at the meeting was on the use of telephones for train despatching, on which this body has already passed approving resolutions. Mr. Drew, Secretary of the association, says that there are now railway lines aggregating 4,900 miles in length on which train orders are sent by telephone; and a length of 7,700 miles of line in addition to this which is now being equipped for telephone despatching. Mr. Camp, of the Canadian Pacific, Presi-

dent of the association, says that the Canadian Pacific has 130 miles of telephone lines in use and has ordered material for 1,032 miles more. It does not appear, however, that these Canadian Pacific telephone lines are used for train despatching.

George T. Slade, General Manager of the Northern Pacific, being invited to address the meeting, complimented the telegraph superintendents on the ability and enterprise with which they had kept pace with the growing needs of the railway service, by the introduction of improved methods in telegraphing; and now they are to make still further and better progress by adopting the telephone and the selector calling apparatus. One defect in the telegraph service has been the fact that it is so generally in the hands of immature persons. Older persons cannot readily learn to be telegraph operators. With the telephone it will be possible to select a better class of operators as the only vital qualification is the ability to speak the English language. There is no reason why we should not have henceforth an improved personnel in the handling of train orders. Tuition, instruction and supervision should also be improved. In most departments the instructor or supervisor goes over the road and sees the subordinates, but hitherto, on the majority of railways, we have put the supervision of the forces who handle train orders in the hands of the chief train dispatcher, who usually cannot come in personal contact with his men and so can give them no counsel, advice or instruction, except at long range. Many young men who might have succeeded have failed because of the lack of this instruction and counsel.

MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass.; June, 1909.
- AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.—R. W. Pope, 33 West 39th St., New York; second Friday in month; New York.
- AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 24 Park Pl., New York; May, 1909; New York.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—S. F. Patterson, B. & M., Concord, N. H.; Oct. 19, 1909; Jacksonville, Fla.
- AMERICAN RAILWAY ENGINEERING AND MAINT. OF WAY ASSOC.—E. H. Fritch, Monadnock Bldg., Chicago; March 16-18, 1909; Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, Old Colony Bldg., Chicago; June 18-18, 1909; Atlantic City.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—C. W. Hunt, 220 W. 57th St., N. Y.; 1st and 3d Wed., except July and Aug.; New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York; Jan. 12, 1909; New York.
- AMERICAN STREET AND INTERURBAN RAILWAY ASSOCIATION.—B. V. Swenson, 29 W. 39th St., New York.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—C. G. Phillips, 143 Dearborn St., Chicago; April 28, 1909; Cincinnati.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—C. L. Young, C. & N.-W. Ry., Chicago, Ill.; May, 1909; Detroit, Mich.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, Wisconsin Central Ry., Chicago; June 23-25, 1909; Detroit.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 24 Park Pl., New York.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 1st Tues. in month, except June, July and Aug.; Montreal.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, Montreal, Que.; January; Montreal.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Friday in January, March, May, Sept. and Nov.; Buffalo.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Rich., Fred. & Pot. R.R., Richmond, Va.; June 16, 1909; Old Point Comfort, Va.
- INTERNATIONAL MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 62 Liberty St., New York; May, 1909; Louisville, Ky.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.—D. B. Sebastian, La Salle St. Station, Chicago; June, 1909.
- IOWA RAILWAY CLUB.—W. B. Harrison, Union Station, Des Moines, Iowa; 2d Friday in month, except July and August; Des Moines.
- MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Old Colony Bldg., Chicago; June 21-23, 1909; Atlantic City.
- NEW ENGLAND RAILROAD CLUB.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tues. in month, ex. June, July, Aug. and Sept.; Boston.
- NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August; New York.
- NORTH-WEST RAILWAY CLUB.—T. W. Flannagan, Soo Line, Minn.; 1st Tues. after 2d Mon., ex. June, July, Aug.; St. Paul and Minn.
- RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, Pittsburgh, Pa.; 4th Friday in month, except June, July and August; Pittsburgh.
- RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, 12 North Linden St., Bethlehem, Pa.; March 15, 1909; Chicago.
- ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Walter E. Emery, P. & P. U. Ry., Peoria, Ill.; Nov., 1909; Washington.
- ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug.; St. Louis.
- SOUTHERN AND SOUTHWESTERN RY. CLUB.—A. J. Merrill, Prudential Bldg., Atlanta; 3d Thurs. Jan., April, Aug. and Nov.; Atlanta.
- TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R. R.R., East Buffalo, N. Y.; September, 1909; Denver.
- WESTERN RAILWAY CLUB.—J. W. Taylor, Old Colony Bldg., Chicago; 3d Tuesday each month, except June, July and August; Chicago.
- WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, Monadnock Bldg., Chicago; 1st Wednesday, except July and August; Chicago.

Traffic News.

The Chicago, Rock Island & Pacific has turned its milk and cream traffic over to the United States Express Company. The action was taken because of the trouble and expense incident to handling this business in Chicago.

The first movement of Canadian grain to Mexico under the new tariff conditions was begun Dec. 15, when H. H. Cooper, representing a Mexican syndicate, arrived in Winnipeg to ship wheat and oats south via Vancouver. The grain will go to the west coast of Mexico via the Canadian-Mexican Line to Manzanillo. The rate is 50 cents per 100 lbs. on wheat and 47 cents on oats to the City of Mexico. Mr. Cooper says that from 8,000,000 to 16,000,000 bushels of hard wheat from Canada will be taken in Mexico if it can be moved, as the soft Kansas variety cannot compete with the hard Northern grain in spite of a difference of 10 cents in favor of the Kansas rates.

Passenger officers of the Wheeling & Lake Erie and the Wabash-Pittsburgh Terminal have announced, following a meeting in Pittsburgh on December 16, that they will reduce their single-trip rate between Pittsburgh and Chicago from \$9 to \$8. These roads handle through passenger business between Toledo and Pittsburgh in connection with the Wabash. The Wabash, however, is not a party to the move, the object of which is to get for the roads mentioned a larger share of the Chicago-Pittsburgh business. The Wabash and its connections now run only one passenger daily between Chicago and Pittsburgh. It is not likely that the reduction will be put into effect until after a conference.

Z. T. Haven, Special Master of the Federal court in the case involving the validity of the order of the Kansas Board of Railroad Commissioners requiring a reduction of 20 per cent. in freight rates, has ruled that the Leavenworth & Topeka shall be treated in the hearing as distinct from the Union Pacific, which owns 49 per cent. of its stock, and from the Atchison, Topeka & Santa Fe, which owns 51 per cent. of its stock. It has been shown in the testimony that the Leavenworth & Topeka, considered alone, has been unprofitable; and it is contended that, as applied to it, the order of the Commission is confiscatory. The suit of the Leavenworth & Topeka is being used as a test of the validity of the Commission's order.

The Interstate Commerce Commission, in a recent ruling in conference, held that where a railway hauls supplies for a hotel free it must be sure the hotel confines itself to feeding only travelers on that road. On the request of the Atchison, Topeka & Santa Fe, the Commission has decided to give further consideration to the subject. The Santa Fe years ago induced Fred Harvey to establish a string of hotels on its lines from Kansas to California, because it was believed that the expense of hauling dining cars across the thinly-populated country in the West, through which the road runs, would be excessive. Some of the hotels then established, and now managed by a corporation under the name of Fred Harvey, have become famous resorts for tourists. It is stated that strict enforcement of the Commission's ruling would make these hotels unprofitable.

INTERSTATE COMMERCE COMMISSION.

Yet again lower rates to more distant points on the same line are held reasonable where severe competition exists at the more distant points and not at the nearer points.

It is proper to rate illustrated post cards as holiday cards rather than as paper photographic cards and cardboard (cut in shape), since the latter class might be more properly defined as photographic mounts.

Tallow in barrels or other packages with cloth covers takes third class rates in western classification, whereas the same article in barrels or casks with wooden tops is rated at fourth class. The method of enclosure being within the choice of the shipper, the difference in rates is reasonable.

No allowance for the weights of stakes used to secure lumber on a flat car was made in the tariff of the Chicago,

Milwaukee & St. Paul when certain shipments of lumber were made, and later the tariff of the St. Paul was changed so as to make such an allowance. The commission, therefore, allowed reparation for shipments made before the tariff was amended.

Minimum Weights and Hay Shipments in Small Cars.

Kansas City Hay Dealers' Association v. Missouri Pacific et al. Opinion by Commissioner Harlan.

The published tariffs of the defendant, in fixing minimum carload weights, bases this weight entirely on the length of cars used, regardless of their width and height. The result is that although the minimum weight prescribed in the published tariffs for a car of given length can be loaded into cars of that length having the proper width and height, it cannot be loaded into cars of the same length that are deficient in those particulars. The complainant's contention seems to be based on the ruling of the commission in *Wiemer et al. v. Chicago & North-Western et al.*, 12 I. C. C., Rep. 462; but in the *Wiemer* case there was the added factor that the defendant was allowing a lower minimum weight on the same kind of shipment to shippers at one town than to shippers at another. No such conditions exist in this proceeding. While uniformity in decisions of the commission is highly desirable, and while the conclusions reached by the commission in one case, touching the reasonableness of a rule or regulation affecting rates, ought ordinarily to afford a guide in another case, in which the same rule or regulation is involved, it must nevertheless not be forgotten that reasonableness is ordinarily a question of fact, which should be decided in any proceeding on the record made in that proceeding, and the conclusions of fact arrived at in one case are not binding ordinarily in a subsequent proceeding between another group of litigants.

It is shown that 65 to 70 per cent. of the hay cars coming into Kansas City consigned to complainants were loaded to, or in excess of, the minimum weights required in the published tariffs of the defendant, a fact strongly suggesting that all cars with more care in loading could have carried the required weight. Moreover, 90 per cent. of the cars outbound from Kansas City were loaded to the required minimum weight, or in excess. This is explained by the statements that dealers had bales of different sizes and could fill up remaining spaces, while farmers could only fill the car with one size of bales and so possibly would leave some space unfilled. The difficulty in loading hay is that there is no bale of recognized standard, either with respect to size or weight. Bales are now of less weight than formerly, and defendant suggests that since dealers buy the hay by the pound and sell by the bale, this decrease in weight per bale is explained by the effort of the dealers to make a greater profit at the expense of the consumer. The evidence in this case, however, does not establish this contention; nevertheless, the fact remains that if the complainant prevails on the commission to lower the minimum weight for cars of a certain length, the rate on hay is thereby lowered. It has been shown that hay is not a particularly profitable shipment for the railways to carry, and the commission does not favor a reduction in the rate. The complaint is therefore dismissed, with the exception of its application to 34-ft. and 36-ft. cars, having a height of 6 ft. 9 in., and less, inside measurement. The minimum weight for such cars should be reduced to 17,500 lbs. for 34-ft. cars and 20,000 lbs. for 36-ft. cars.

STATE COMMISSIONS.

The New York Public Service Commission, First District, has dismissed the complaint asking to have the fare reduced from 10 cents to 5 cents between New York and Flushing. It is plainly shown that with the 10 cent fare, the business is carried at a loss, and a reduction of the fare will not cause a sufficiently large increase in business to make it show a profit because of the proximity of the station of the Long Island Railroad to the Flushing terminus, the railway affording a quicker means of reaching Manhattan than the trolley cars, which "start out from the same point not more than half filled."

REVENUES AND EXPENSES OF RAILWAYS.

MONTH OF OCTOBER, 1908.

See also issues of December 11 and 18.

Mileage operated at end of period.	Name of road.	Operating revenues.				Operating expenses.				Net operating revenues (or deficit).	Outside operations.	Taxes.	Operating income (or loss).	Increase (or dec.) 1907.
		Freight.	Passenger.	Total.	Inc. misc.	Way and structures.	Maintenance of equipment.	Traffic.	Trans- portation.					
301	Ann Arbor	\$125,650	\$37,393	\$163,043	\$170,837	\$25,471	\$23,429	\$2,890	\$56,770	\$106,273	\$3,916	\$11,369	\$50,603	\$83,642
302	Buffalo & Susquehanna	201,125	16,159	217,284	223,617	37,596	44,530	1,984	78,983	138,291	70*	4,000	55,555	94,338
303	Buffalo, Rochester & Pittsburgh	612,162	74,870	687,032	721,198	107,467	128,122	8,193	196,487	490,545	154	15,900	252,776	73,213
304	Central Branch	122,758	29,958	152,716	163,633	30,880	20,609	3,327	49,761	103,855	255	9,360	63,738	41,118
305	Chicago & Erie	310,513	65,477	375,990	403,833	41,021	90,720	11,212	178,573	297,417	255	17,533	153,227	48,912
306	Chicago Great Western	621,313	166,193	787,506	843,860	128,994	141,871	36,952	335,609	651,897	965*	15,392	297,417	44,422
307	Chicago, Indiana & Southern	208,208	21,026	229,234	238,062	36,219	50,556	7,926	93,863	138,375	2,000	15,392	58,464	19,731
308	Chicago, Rock Island & Gulf	173,203	65,800	239,003	251,878	53,393	26,383	5,782	97,396	138,607	183*	6,972	58,464	12,404
309	Chicago, Toledo & Irontrunk	150,252	13,758	164,010	172,324	27,170	40,632	2,420	65,368	98,642	137	6,972	58,464	20,176
310	Detroit & Iron Range	1,037,885	29,708	1,067,593	1,066,665	96,125	55,647	4,403	151,717	916,876	719	42,892	712,984	73,435
311	Duluth, Missabe & Northern	1,415,137	19,708	1,434,845	1,450,915	68,374	96,794	1,390	165,066	1,269,781	751	58,326	1,057,461	41,703
312	Duluth, South Shore & Atlantic	163,880	74,326	238,206	252,057	37,689	29,398	6,151	87,117	151,089	800	18,000	66,498	24,194
313	Fort Worth & Denver City	305,446	158,350	463,796	485,375	70,480	63,542	11,172	138,313	325,483	719	58,326	1,057,461	41,703
314	Fort Worth & Rio Grande	80,796	34,923	115,719	121,600	9,989	12,143	7,481	172,454	288,163	183*	8,800	163,825	42,034
315	Hocking Valley	567,869	77,537	645,406	661,505	59,345	81,443	14,155	172,454	473,052	755	21,315	215,240	50,640
316	International & Great Northern	710,470	159,997	870,467	915,081	106,388	155,506	11,322	256,705	613,762	953	7,488	336,573	271,638
317	Iowa Central	203,033	43,763	246,796	258,582	28,226	46,529	8,233	114,004	132,792	316	21,714	234,701	70,394
318	Long Island	262,538	399,590	662,128	686,646	83,796	98,468	12,367	318,970	347,658	103	16,000	171,000	18,080
319	Mason City & Fort Dodge	126,705	45,442	172,147	183,708	27,031	48,529	10,130	140,874	132,273	4,204*	17,321	171,000	19,985
320	Missouri Pacific	320,808	367,160	687,968	718,035	105,091	144,449	1,048	136,483	551,485	2,894	13,838	187,192	85,611
321	Mobile, Jackson & Kansas City	112,220	25,369	137,589	145,839	18,515	14,449	7,403	136,483	23,104	446	14,900	82,679	18,115
322	Morgan's L. & Texas R.R. & S. Co.	307,149	90,406	397,555	420,680	29,334	20,643	4,420	48,903	348,652	1,094	9,230	70,333	38,288
323	Norfolk & Southern	134,851	50,096	184,947	199,166	91,433	246,493	2,899	94,446	190,501	7,474*	6,800	270,015	58,285
324	Northwestern Pacific	137,555	125,840	263,395	286,708	59,722	40,546	8,581	48,903	214,492	1,094	9,230	70,333	38,288
325	St. Louis, Iron Mtn. & Southern	1,586,069	365,993	1,952,062	2,018,918	280,334	246,316	54,350	639,496	1,312,572	1,971	24,405	2,968,389	671,027
326	San Antonio & Aransas Pass	319,752	68,473	388,225	406,136	42,543	41,328	4,440	130,562	357,663	1,971	24,405	2,968,389	671,027
327	Seaboard	4,761,100	2,186,370	6,947,470	7,363,292	938,230	980,676	100,211	1,917,474	5,030,816	3,967	7,405	59,220	14,942
328	Texas & New Orleans	228,942	69,917	298,859	317,901	53,642	50,687	7,773	132,743	266,116	2,894	13,838	187,192	85,611
329	Toledo & Ohio Central	402,711	48,199	450,910	463,826	37,729	18,583	3,136	36,197	414,623	.....	4,000	20,243	11,116
330	Toledo, Peoria & Western	247,802	34,194	281,996	305,373	17,729	40,356	8,363	103,127	278,846	.....	11,500	93,709	43,925
331	West Jersey & Sea Shore	134,249	201,057	335,306	364,117	38,270	17,681	17,681	139,856	295,450	4,200	17,112	27,585	46,665
332	Wheeling & Lake Erie	474,816	547,199	1,022,015	1,068,888	126,620	6,282	18,672	180,672	888,213	795	22,472	127,482	14,231
333	Wisconsin, Minnesota & Pacific	49,815	15,570	65,385	69,804	20,189	5,239	288	25,073	42,312	36	2,792	16,980	1,132
301	Ann Arbor	\$392,674	\$185,670	\$578,344	\$621,035	\$93,442	\$84,528	\$12,519	\$217,992	\$361,342	\$12,012	\$45,475	\$162,683	\$44,510
302	Buffalo & Susquehanna	669,630	79,109	748,739	773,176	142,060	158,396	10,528	257,813	490,926	71*	16,000	730,071	161,424
303	Buffalo, Rochester & Pittsburgh	2,135,748	351,286	2,487,034	2,618,231	407,655	596,337	34,531	736,872	1,751,359	.....	60,000	1,811,359	407,799
304	Central Branch	467,787	125,363	593,150	638,218	89,710	68,057	11,204	193,336	399,814	.....	38,000	223,391	66,400
305	Chicago & Erie	1,023,013	287,491	1,310,504	1,451,966	165,936	336,580	43,635	642,251	669,713	1,463	45,913	189,849	120,114
306	Chicago Great Western	2,092,788	761,298	2,854,086	2,979,022	436,991	466,397	146,965	1,178,065	1,685,921	2,127*	60,000	1,165,921	17,690
307	Chicago, Indiana & Southern	734,221	96,138	830,359	880,067	171,610	243,939	35,582	345,036	485,323	6,050	60,000	116,560	43,858
308	Chicago, Rock Island & Gulf	600,394	250,824	851,218	901,200	225,936	84,100	24,939	355,582	595,636	775*	16,209	160,149	24,492
309	Detroit, Toledo & Irontrunk	505,275	61,656	566,931	599,015	94,753	136,482	9,684	228,276	338,655	198*	27,915	82,594	58,213
310	Duluth, Missabe & Northern	3,891,053	117,007	4,008,060	3,999,675	334,163	220,680	1,140	544,512	3,454,158	14,316	161,197	2,713,765	139,032
311	Duluth, South Shore & Atlantic	5,745,345	117,467	5,862,812	5,884,583	317,491	370,488	4,455	618,844	5,266,738	38,674	236,534	4,329,368	201,689
312	Duluth, Toledo & Irontrunk	531,395	350,622	882,017	938,438	164,549	104,409	40,125	327,110	561,327	8,809	60,000	222,078	87,363
313	Fort Worth & Denver City	1,014,158	111,908	1,126,066	1,236,048	173,072	216,018	32,119	512,069	604,039	.....	34,733	614,235	36,254
314	Hocking Valley	2,057,518	331,786	2,389,304	2,455,450	346,450	336,765	9,753	1,254,009	1,135,295	37,929	82,554	909,197	25,034
315	Iowa Central	1,948,294	601,296	2,549,590	2,723,684	384,034	412,883	58,501	1,025,173	1,703,511	.....	29,674	263,921	103,900
316	International & Great Northern	1,877,006	202,114	2,079,120	2,138,773	382,569	397,339	63,481	1,276,921	1,802,200	41,865	86,854	1,441,649	189,128
317	Long Island	903,505	2,253,176	3,156,681	3,301,640	87,503	86,990	6,865	253,030	2,803,651	2,133	24,000	224,044	42
318	Mason City & Fort Dodge	468,254	172,816	641,070	682,890	159,115	171,601	40,368	503,353	1,144,417	31*	63,186	564,230	32,149
319	Mississippi Valley	997,590	452,137	1,449,727	1,545,530	159,115	171,601	40,368	503,353	946,374	4,268*	308,420	1,249,791	245,406
320	Missouri Pacific	5,563,179	1,500,286	7,063,465	7,769,454	966,193	1,018,057	181,810	2,025,823	5,037,642	.....	11,381	123,020	39,117
321	Mobile, Jackson & Kansas City	333,352	101,343	434,695	466,896	76,131	58,158	6,158	158,453	276,242	2,343*	59,600	251,419	192,357
322	Morgan's L. & Texas R.R. & S. Co.	959,882	329,839	1,289,721	1,374,453	263,421	172,420	32,761	544,500	745,221	2,949	27,000	176,253	43,719
323	Norfolk & Southern	449,856	234,740	684,596	734,381	135,624	86,027	24,411	63,255	520,846	3,654	1,035,063	1,035,063	174,144
324	Northwestern Pacific	2,982,044	743,864	3,725,908	3,943,112	268,954	737,480	52,974	1,677,610	2,068,298	.....	78,058	1,035,063	174,144
325	St. Louis, Iron Mtn. & Southern	506,314	685,269	1,191,583	1,275,732	253,690	150,176	9,458	390,162	801,421	7,833*	36,920	398,562	78,659
326	San Antonio & Aransas Pass	3,389,589	1,500,469	4,890,058	5,192,522	1,063,648	940,476	169,266	2,512,004	2,377,554	.....	2,343,354	2,343,354	35,653
327	Southern Pacific	17,145,427	9,180,214	26,325,641	28,126,229	3,583,052	4,141,721	41,721	7,323,741	18,801,908	9,738	86,200	11,935,621	1,606,206
328	Texas & New Orleans	1,058,556	266,186	1,324,742	1,426,465	181,461	137,747	20,773	484,590	840,152	21,834	55,055	753,081	161,230
329	Toledo & Ohio Central	1,518,137	252,235	1,770,372	1,825,615	237,526	249,098	23,778	504,166	1,266,206	.....	16,000	385,378	20,593
330	Toledo, Peoria & Western	331,645	187,753	519,398	549,147	66,332	71,672	8,105	134,910	384,488	49,691	68,449	830,152	436,000
331	West Jersey & Sea Shore	941,561	187,753	1,129,314	1,216,065	171,867	386,396	37,894	770,930	348,400	.....	80,153	544,565	120,546
332	Wheeling & Lake Erie	1,790,141	194,405	1,984,546	2,115,305	271,004	452,113	21,823	664,652	1,320,893	2,686	10,259	67,207	18,736
333	Wisconsin, Minnesota & Pacific	172,127	67,474	239,601	257,483	64,058	24,328	1,449	89,483	150,120	.....	2,792	16,980	1,132

*Deficit. †Decrease.

Testimony in Missouri Rate Case.

The taking of testimony in the suit involving the validity of the Missouri 2-cent fare and commodity freight rate laws was resumed by Judge Smith McPherson in the Federal court at Kansas City, Mo., last week. Alexander Douglas, Fourth Vice-President of the St. Louis & San Francisco, said that under the 2-cent fare his road's traffic had increased and its earnings declined. Had the same average rate been in effect in the fiscal year 1908 as in the previous year earnings would have shown an increase of \$1,455,767 instead of a decrease of \$242,364. A. D. Bethard, Assistant General Manager of the Missouri, Kansas & Texas, gave detailed figures showing the advances in wages of railway trainmen since 1900. C. J. McPherson, Assistant to the General Manager of the Missouri Pacific, said state freight was more costly to haul than interstate because it required about four times as many cars to do a given amount of work, and local traffic usually could be handled only in day time, while through traffic could be handled night and day.

P. S. Eustis, Passenger Traffic Manager of the Chicago, Burlington & Quincy, said that although 73 per cent. of the total number of passengers on this road in the fiscal year 1907 were state passengers, they furnished only 48 per cent. of the earnings, while the 27 per cent. of interstate passengers furnished 52 per cent. of the earnings.

J. W. Kendrick, Second Vice-President of the Atchison, Topeka & Santa Fe, said that on this road's branch from St. Joseph to Lexington it cost 2.8 times as much to handle freight traffic as on the main line. The average haul on state business was 44 miles; on interstate, 87. It costs 1.22 cents per ton-mile to operate trains on the branch while on the main line the same work is done for four mills. Mr. Kendrick said that almost all the local lines west of the Mississippi were operated at a loss. He said the 2-cent fare legislation and other reductions in rates and losses in traffic had caused abandonment of double track work in Illinois and Missouri. Frank Nay, General Auditor of the Chicago, Rock Island & Pacific, said that the increase of passenger revenue on this road in 1906-7 was 30 per cent., and in 1907-8, under the 2-cent fare, 9 per cent. The average rate per passenger-mile increased 10 per cent. in the former year and decreased 22 per cent. in the latter. He cited figures showing that in states where the 2-cent fare was in effect travel had increased and earnings declined, while in other states both increased.

Freight Car Balance and Performance in July, 1908.

Arthur Hale, Chairman of the Committee on Car Efficiency of the American Railway Association, in presenting statistical bulletin No. 36, covering car balance and performance for July, 1908, says:

"During the period covered by this report, the number of surplus available cars averaged 306,120 daily, this number being 14.26 per cent. of the total cars on all lines included in this statement. There were in addition, bad order cars equal to 10.18 per cent. of the total cars, making 24.44 per cent. of the equipment that contributed nothing to the mileage, tonnage or earnings. Adjusting the averages as in previous statements we secure the following:

	Average miles —per day—		Average ton-miles —per car per day—		Average earnings —per car per day—	
	Inc. surp.	Exc. surp.	Inc. surp.	Exc. surp.	Inc. surp.	Exc. surp.
December, 1907	21.9	23.9	289	316	\$1.98	\$2.17
January, 1908	20.8	24.9	277	325	1.81	2.17
February, 1908	19.7	23.8	271	328	1.82	2.20
March, 1908	21.2	25.5	290	348	1.95	2.34
April, 1908	19.6	24.5	258	324	1.83	2.29
May, 1908	19.3	24.8	254	329	1.72	2.32
June, 1908	19.6	24.7	276	347	1.88	2.37
July, 1908	20.0	24.8	275	342	1.84	2.26

"It will be noted that the mileage, both in the actual and adjusted figures, shows a slight improvement over June, while the adjusted ton mileage per car and earnings per car have decreased. As the tons per loaded car is unchanged, this decrease would seem to be entirely due to the slight decrease in loaded mileage.

"In the car balance figures, there is indication of an increas-

FREIGHT CAR BALANCE AND PERFORMANCE IN JULY, 1908.

	New York, Del., Md., Eastern Pa.	New England.	New York, Del., Md., Eastern Pa.	Ohio, Indiana, Mich., Western Pa.	Virginia, W. Va., No. and So. Carolina.	Ky., Tenn., Miss., Ala., Ga., Fla.	Iowa, Ill., Wis., Minnesota.	Montana, Wyo., Neb., Dakotas.	Kansas, Colo., Okla., Ind. T., Mo., Ark.	Texas, Louisiana, N. Mex.	Oregon, Idaho, Nev., Cal., Arizona.	Canadian Lines.	Grand total.
Revenue freight cars owned	71,680	663,953	663,953	280,543	134,375	174,864	368,772	15,768	138,576	26,518	112,365	97,393	2,084,787
Average number of system cars on line	58,099	504,988	504,988	234,321	99,188	133,985	303,669	6,507	107,955	15,524	64,003	80,820	1,609,059
Railroad-owned cars: Av. foreign on line	21,356	131,410	131,410	57,912	20,415	30,084	65,994	10,539	31,916	14,718	42,941	12,333	439,618
Total cars on line	79,455	636,398	636,398	292,233	119,603	164,069	369,663	17,046	139,871	30,242	106,994	93,153	2,048,677
Excess	7,795	.....	.....	11,690	.....	.....	891	1,278	1,295	3,724	.....	.....	.....
Per cent. cars on line to total owned:													
Home	81	76	76	83	74	77	82	41	78	59	57	83	77
Foreign	30	20	20	21	15	17	18	67	23	55	38	13	21
All railroad-owned	111	96	96	104	89	94	100	108	101	114	95	96	98
Private cars on line	2,227	36,048	36,048	14,026	2,931	6,755	13,154	1,416	7,622	1,863	6,483	3,838	96,363
Total, all cars on line	81,682	672,446	672,446	306,259	122,534	170,824	382,817	18,462	147,493	32,105	113,427	96,991	2,145,040
Per cent. of cars in shop	9.00	11.22	11.22	10.23	9.87	11.38	6.46	6.33	17.14	6.75	7.67	8.41	10.18
No. of freight engines owned	1,128	9,768	9,768	3,770	2,224	2,573	6,274	440	2,505	673	2,325	2,089	33,769
Av. cars on line per freight engine owned	72	69	69	81	55	66	61	42	59	48	49	46	64
Total freight-car mileage	37,849,684	405,980,825	405,980,825	166,123,590	73,535,211	104,330,437	248,572,498	23,106,212	80,637,827	25,052,730	90,184,774	67,698,065	1,323,071,853
Average miles per car per day	14.9	13.5	13.5	17.5	19.4	19.7	20.9	40.4	18.3	25.2	25.6	22.6	20.0
Per cent. loaded mileage	69.4	65.2	65.2	62.7	66.0	67.7	70.7	71.1	67.6	58.9	69.9	74.4	67.3
Ton-miles of freight, inc. Co. freight	370,235,827	6,073,880,809	6,073,880,809	2,381,005,108	947,082,551	1,346,526,117	1,836,653,128	328,557,960	1,042,666,497	252,292,230	1,331,465,740	810,795,558	16,722,061,825
Average ton-miles, including Co. freight:													
Per car-mile	9.8	15.0	15.0	15.6	12.9	13.1	11.9	14.7	13.0	10.2	14.8	11.9	13.8
Per loaded car-mile	14.1	22.9	22.9	24.9	19.5	17.8	17.3	20.6	19.3	17.3	21.1	16.0	20.6
Per car per day	146	291	291	277	250	258	251	612	238	256	380	270	275
Gross freight earnings	\$4,410,310	\$37,007,929	\$37,007,929	\$13,699,370	\$6,561,078	\$8,684,110	\$10,953,373	\$2,740,044	\$8,972,373	\$2,661,786	\$11,898,961	\$3,758,919	\$119,348,253
Average daily earnings: Per car owned	\$1.99	\$1.80	\$1.80	\$1.58	\$1.58	\$1.63	\$1.67	\$5.61	\$2.10	\$3.64	\$3.42	\$1.91	\$1.89
Per railroad-owned car on line	1.79	1.88	1.88	1.51	1.77	1.75	1.67	5.19	2.08	2.84	3.60	1.99	1.92
All cars on line	1.74	1.78	1.78	1.44	1.73	1.67	1.61	4.79	1.97	2.67	3.39	1.92	1.84

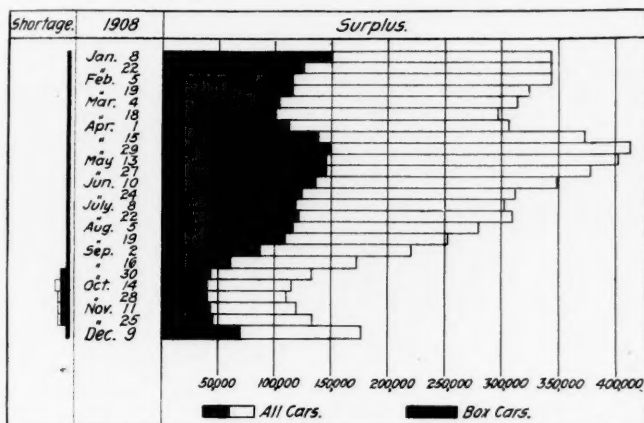
ing use of foreign equipment. Cars on their home lines have decreased from 78 per cent., the figures maintained during April, May and June, to 77 per cent. for July. There are also marked increases in the foreign cars in use in several of the groups, and the number of groups using cars in excess of their ownership has increased from four in June to six in July. As noted above, the shop cars equalled 10.18 per cent. of the total, as compared with 9.69 per cent. during June. The total increase in shop cars since November, 1907, equals 4.91 per cent. of the total equipment. Reports received in connection with surplus and shortage reports, indicate that the number of shop cars was reduced, beginning with August, so we may consider the July percentage as the maximum."

The accompanying table shows by group car balance and performance in July, 1908.

Car Surpluses and Shortages.

Arthur Hale, Chairman of the Committee on Car Efficiency of the American Railway Association, in presenting bulletin No. 37, giving a summary of car surpluses and shortages by groups from November 27, 1907, to December 9, 1908, says:

"The surplus on the date of this report totaled 175,643,



Car Surpluses and Shortages in 1908.

the highest figure since September 2. The total increase in surplus in the two weeks from the date of our last report equals 42,814, of which 22,356 are box cars and 14,962 coal and gondola. The increase is quite general in the Eastern, Middle, Western and Northwestern territory, while the

Hearing in Pullman Case.

Commissioner Lane, of the Interstate Commerce Commission, continued to take testimony in the case of George S. Loftus at Chicago until December 16. The testimony of William Hough, Assistant Auditor of the Pullman Company, showed that practically every important railway on the North American continent excepting the Chicago, Milwaukee & St. Paul, the New York, New Haven & Hartford, the Great Northern and the Canadian Pacific, run Pullman sleeping and parlor cars.

Richmond Dean, General Manager of the Pullman Company, who was a witness, said he thought 15 to 20 per cent. was a reasonable profit for a public service corporation. He stated that the net earnings of the company had declined within recent years owing to less favorable contracts with the railways and increasing expenses. The company always fears a reduction in its revenues through the withdrawal from their contracts of roads using large numbers of cars. Mr. Dean was asked if a reduction of 25 per cent. in the price of an upper berth would not increase the number of passengers hauled per car and thereby greatly increase the revenues of the company. He said that experience showed that this would not be the result. The New Haven had for years been charging between Boston and New York \$2 for a lower berth and \$1.50 for an upper, and the lowers were always taken first. A similar experiment was made four or five years ago by the Chicago & Alton, the Illinois Central and the Wabash, on a night excursion between Chicago and St. Louis. Passengers were sold tickets at 50 cents less if they would take an upper berth, but out of 192 of each kind of berths, only 14 lowers were left unoccupied while only 41 uppers were taken. Mr. Dean admitted that this showed that the public preferred lower berths, but said it also showed that a lower price for upper berths would not increase the demand for them.

Referring to a contract made with the Pennsylvania in 1900 he said this had already entailed, on the basis of the previous contract, a loss of over \$300,000. The contracts are usually made by the president, vice-president and himself with the corresponding officers of the railways, but he said he had no knowledge of whether any railway officers were stockholders in the Pullman Company. He stated that the porters are paid \$25 a month, and in addition porters and conductors are given an extra month's pay each year if their records at the end of the year are satisfactory. These extra payments amounted to \$185,000 during last year. He thought the compensation of porters was as much as the same men could get elsewhere, and that the tipping system was not due to their small pay, but to the selfish desire of some passengers to get better service than others. Mr. Dean said that the only

CAR SURPLUSES AND SHORTAGES, FROM NOVEMBER 27, 1907, TO DECEMBER 9, 1908, INCLUSIVE.

Date.	Number of roads.	Surpluses.					Shortages.				
		Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.	Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.
December 9, 1908.....	161	67,550	15,336	58,816	33,941	175,643	1,134	73	276	196	1,679
November 25, 1908.....	160	45,194	12,157	43,854	31,624	132,829	7,923	178	900	209	9,210
October 28, 1908.....	158	39,383	10,185	31,541	29,803	110,912	8,175	167	2,261	236	10,839
September 30, 1908.....	160	42,593	10,365	49,795	31,039	133,792	7,313	450	224	127	8,114
August 19, 1908.....	160	106,367	13,494	92,500	40,642	253,003	465	90	105	194	854
July 22, 1908.....	166	120,580	14,401	125,739	47,960	308,680	115	37	330	27	509
June 24, 1908.....	163	123,112	18,042	130,149	41,995	313,298	266	34	120	31	451
May 27, 1908.....	160	144,697	20,075	162,695	54,437	381,904	82	13	12	18	125
April 29, 1908.....	159	147,971	24,350	186,742	59,542	413,605	145	42	16	64	267
March 18, 1908.....	160	103,509	25,122	119,205	49,206	297,042	533	151	250	73	1,007
February 19, 1908.....	161	113,776	30,088	134,217	44,432	322,513	697	141	249	162	1,249
January 22, 1908.....	161	124,622	27,328	142,888	48,292	342,580	392	132	79	135	738
December 24, 1907.....	158	87,714	14,740	64,556	42,300	209,310	187	81	191	265	724
November 27, 1907.....	160	16,246	3,645	10,028	10,429	40,348	11,908	868	2,964	2,224	17,964

Southern and Southwestern groups show some improvement. Shop reports show a continued decrease in the number of bad order cars, the decrease for this period approximating 10,000 cars. It will be noted that the shortages reported in the reports for October and November have been materially reduced, those remaining being scattered and of little importance."

The accompanying table shows the surpluses and shortages for the period covered by the report and the chart shows the surpluses and shortages in 1908.

thing that prevented the railways from owning their own sleeping cars was the constant efforts of the Pullman Company to give them better and cheaper service. With respect to the efforts of the company to make improvements, he said it spent a great deal of money in experimenting with material. It had provided a new berth curtain because the public objected to the stuffiness of the old, and it now had several factories experimenting to make a material to replace the plush which covers the seats of cars and which travelers

complain of as hot in summer and as objectionable because it collects and holds dirt. Mr. Dean submitted a table which showed that 7,081,283 lower berths had been occupied on Pullman cars between Chicago and St. Paul during the fiscal year 1908, as compared with 1,727,509 uppers. Of the total, 572,603 berths had been used by persons having Pullman passes. In fifteen years, Mr. Dean said, depreciation of cars and other equipment of the company has been \$23,884,000; during the past fiscal year it was \$2,362,900.

Mr. Hough introduced figures to show that if rates were reduced as asked in Mr. Loftus' complaint, the gross earnings of the company on business between Chicago and St. Paul would be \$4,932 per car and gross expenses \$5,088, making a net loss of \$156 per car per year. Gross earnings per car per year from this business now are \$6,005.

B. H. Boussman, Assistant Auditor of the Chicago, Milwaukee & St. Paul, stated this road, which owns the sleeping cars it uses, earns about \$10,000 per car per year between Chicago and St. Paul.

A novel feature of the hearing was the introduction of the testimony of two women, Mrs. Anna L. McNulty, Secretary of the National Art Society of Chicago, and Mrs. Anna E. Warwick, an employee of a Chicago department store, to show that upper berths were undesirable from the feminine viewpoint. They both said they thought an upper berth not worth half as much as a lower.

Officers of the Pullman Company claim that the company is in constant danger from a potential competition at the hands of the railways. The railways have grown so strong that the loss of one leading system would be a staggering blow to the Pullman Company. Contracts with the railways are not as favorable as they were years ago. It was a universal custom formerly to pay mileage for Pullman cars and there were no exemptions if the cars earned certain amounts. There were many maintenance contracts where the railways attended to all the repairs on the coach features of a car, only the Pullman features being repaired by Pullman. At one time the mileage receipts exceeded the amount expended in repairs, whereas now the repairs average \$2,400 per car in excess of mileage. Last year's mileage aggregated \$600,000 as against more than \$2,000,000 a few years ago. There is scarcely any competition for the manufacturing department, so far as sleeping cars are concerned, although the American Car & Foundry Co. sometimes bids on such cars for the few roads which run their own sleepers. * * * Every time the Pullman Company makes a new contract the road exacts new conditions, and the Pullman Company earnings per car are very much less than they were 15 years ago. The railways object to the use of old cars and Pullman has to keep adding to the unserviceable list. "We have a large number on hand now that we would like to dispose of if we could get somebody to buy them."

New Tariffs for Rock Island and Frisco Systems.

Under the direction of W. B. Biddle, Third Vice-President, the freight traffic department of the Rock Island-Frisco Lines is experimenting with a method of tariff-making that it is expected will result in a material simplification of tariffs on a number of commodities.

The idea is to have a single tariff for a single commodity instead of several. The Chicago & Eastern Illinois is having printed a tariff on lumber which will soon cancel all lumber tariffs now in effect, and which will be a compilation of local, joint and proportional rates on forest products, c. l., from Burlington, Iowa; Davenport, Iowa; Evansville, Ind.; Jopka, Ill.; Memphis, Tenn.; Moline, Ill.; Mt. Vernon, Ind.; Muscatine, Iowa; Rock Island, Ill.; St. Louis, Mo., and Thebes, Ill.; and also from points in Arkansas, Louisiana, Missouri, Mississippi, Oklahoma and Texas to points in Illinois, Indiana, Kentucky, Michigan, Missouri, New York, Ohio, Pennsylvania, West Virginia and Wisconsin; also to Atlantic seaboard, interior eastern and Canadian points.

The tariff when printed will bear a note from the Interstate Commerce Commission stating that "as an assistance in reaching simplicity and clearness in tariff construction and contemplating eventual statement of rates in specific," the Commission has given special authority to the Chicago

& Eastern Illinois temporarily and subject to revocation, to issue this tariff. The Chicago & Eastern Illinois will state that "in the publication of this tariff, it is the desire of these companies (Rock Island-Frisco) to place in the hands of their shippers and connections clear and complete information as to lumber rates, not only from the gateways, but in a special section provide rates to the particular gateways, so that the person using this issue will have in one tariff complete information concerning rates from the point of origin to the final destination." Shippers are asked to communicate to F. C. Reilly, General Freight Agent of the Chicago & Eastern Illinois, any suggestions or criticisms they may have to offer for making the tariff more complete and perfect.

What action shall be taken about tariffs on other commodities will depend on how the new tariff on lumber works. Should it prove the success expected the Rock Island-Frisco lines may issue one tariff on grain, one on cotton, etc.

Freight Traffic Clerks' Club of St. Louis.

The Freight Traffic Clerks' Club of St. Louis has been organized with the following officers: President, W. I. Jones; First Vice-President, W. Culp; Second Vice-President, L. M. Shepardson; Third Vice-President, E. L. Johnson; Secretary, F. B. Clark; Treasurer, J. G. Brice. The object of the club is stated in the constitution and by-laws to be "to form a closer business and social relationship between chief, tariff and rate clerks of the St. Louis traffic offices and tariff committees, and to discuss matters of importance relating to the compilation of tariffs, promulgation of rates and construction of publications." Active members must be employees of railways or railway associations such as those above mentioned. Officers of railways and chairmen of freight traffic committees and industrial freight bureaus are eligible for honorary membership.

Railroad Officers.

ELECTIONS AND APPOINTMENTS.

Executive, Financial and Legal Officers.

John P. Ramsey, Vice-President and General Manager of the Chicago, Peoria & St. Louis, has been elected President.

W. H. Newman, President of the New York Central & Hudson River and of most of its subsidiary companies, has resigned, effective February 1, 1909. No successor has as yet been chosen.

Horace G. Burt, who has been employed by the English debenture stockholders to make a physical examination of the Chicago Great Western, has been appointed Receiver, succeeding A. B. Stickney, who has resigned as Receiver but remains President.

Herman M. Moors, whose appointment as Freight Claim Agent of Morgan's Louisiana & Texas Railroad & Steamship Co., the Louisiana Western and the Southern Pacific Atlantic Steamship Lines, has been announced in these columns, was born at Galveston, Tex., on July 18, 1880. He was educated in the public schools and Jesuit College. He began railway work August 1, 1897, in the joint offices of the Galveston, Houston & Henderson, the International & Great Northern and the Missouri, Kansas & Texas. In October, 1901, he was promoted to General Clerk of the Missouri, Kansas & Texas in the St. Louis, Mo., office. In January, 1902, he was made Traveling Auditor at St. Louis. In July, 1902, he was made a Claim Investigator of the San Antonio & Aransas Pass at San Antonio, Tex., and on July 18, 1905, was made Chief Clerk of the Claim Department, which position he held until his present appointment.

Operating Officers.

D. D. Freeborn has been appointed Terminal Superintendent of the Mexican Central at Juarez and El Paso, Tex., succeeding J. B. Wallace, promoted.

S. B. Zartman, Trainmaster of the Seaboard Air Line at Richmond, Va., has been transferred to Jacksonville, Fla. A. Ramseur succeeds Mr. Zartman.

H. W. Sheridan, Assistant Superintendent of the Sacramento division of the Southern Pacific, has been appointed Superintendent, succeeding D. Burkhalter, deceased.

R. E. Comfort, Superintendent of the Interoceanic of Mexico at Puebla, Puebla, Mex., has been appointed General Superintendent, succeeding F. W. Baldwin, deceased.

S. H. Shults, Assistant Division Superintendent of the Chicago, Burlington & Quincy at Brookfield, Mo., has been appointed Superintendent of the Brookfield division, succeeding W. F. Thiehoff, promoted.

William J. Davis, Superintendent of the Lake Erie & Western at Lafayette, Ind., has resigned to become General Manager of the Mississippi Valley Iron & Furnace Co. The resignation takes effect January 1.

M. H. Reynolds, for the last two years in the despatching and train service offices of the Guadalajara division of the Mexican Central, has been appointed Chief Despatcher of the Mexican Railway, with office at Mexico City.

L. C. Ullrich has been appointed Assistant to the General Manager of the Southern Railway, with office in Washington, D. C. He is to have general charge of the office, the purchasing and distribution of fuel, the Dining Car department, and will also perform such other duties as may be assigned to him.

Allan Purvis, Superintendent of the Fourth district, Central division, of the Canadian Pacific, with office at Souris, Man., has been appointed Superintendent of the Third district, Pacific division, with office at Nelson, B. C., succeeding D. C. Coleman, whose transfer to another district we have previously announced.

Frank R. Pechin, whose appointment as General Superintendent of the Chicago, St. Paul, Minneapolis & Omaha has been announced in these columns, was born in Chester county, Pa., June 29, 1857. He was educated in the public schools and at Downingtown Academy. He began railway work July 20, 1880, as brakeman, and was later a conductor on the Chicago & North-Western. In December, 1889, he became a conductor on the Louisville Southern, now a part of the Southern Railway. In December, 1890, he returned to the Chicago & North-Western as conductor, and in June, 1897, was appointed Inspector of Passenger Service. In June, 1898, he was appointed Trainmaster at Chicago, and in May, 1899, Assistant Superintendent at Chicago. In February, 1902, he was appointed Superintendent of the Wisconsin division, which position he held until his recent appointment.

Traffic Officers.

S. E. Cruse has been appointed Agent of the Canadian Pacific at Antwerp, Holland.

J. B. Call has been appointed General Freight and Passenger Agent of the Green Bay & Western, succeeding W. C. Modisett, deceased.

S. G. Lutz, Assistant General Freight Agent of the Minneapolis & St. Louis and the Iowa Central, has been appointed Freight Traffic Manager, succeeding J. N. Tittmore, resigned to go with another road.

Engineering and Rolling Stock Officers.

M. J. Powers has been appointed Master Mechanic of the Denver & Rio Grande, at Pueblo, Colo., succeeding W. A. Randow, transferred.

John Boden, Master Mechanic of the Ohio River division of the Baltimore & Ohio, has been transferred to Garret, Ind. H. D. Van Valen, General Foreman at Parkersburg, W. Va., succeeds Mr. Boden.

G. J. Ray, Division Engineer of the Scranton division of the Delaware, Lackawanna & Western, has been appointed Chief Engineer, effective January 1, succeeding Lincoln Bush, whose resignation we have previously announced.

Frank Hopper, Road Foreman of Equipment of the Chicago, Rock Island & Pacific at Dalhart, Tex., has been appointed Road Foreman of Equipment of the Dakota division and part of the Minnesota division, with office at Estherville, Iowa.

Harold Keyes Lowry, whose appointment as Assistant Signal Engineer of the Chicago, Milwaukee & St. Paul has been

announced in these columns, was born on March 24, 1880, at Milwaukee, Wis. After a three years' course in Electrical Engineering in the Massachusetts Institute of Technology, he began railway work in the fall of 1904 in the Signal Department of the Chicago, Milwaukee & St. Paul. He was also employed in the same department during his summer vacations in 1902 and 1903. He has since been connected with the mechanical signal force of the same road as draftsman and in charge of the installation of automatic block signals and electric interlocking. He was also Signal Inspector.

Frank T. Darrow, whose appointment as Engineer of Maintenance of Way of the Chicago, Burlington & Quincy Lines West of the Missouri River has been announced in these



F. T. Darrow.

columns, was born at Corning, Iowa, in 1875. He received his education at Allegheny College, Meadville, Pa., graduating in the class of 1897. He began location and maintenance work for the Chicago, Burlington & Quincy July 6, 1897. From 1899 to 1901, he was engaged in construction work in Colorado, Wyoming and Montana on the Guernsey, Brush and Cody lines of the Chicago, Burlington & Quincy. From 1902 to 1903 he was Resident Engineer on the reconstruction of the Missouri River bridge at Plattsmouth, Neb. From 1903 to 1905 he

was on special detail in bridge work, foundations and erection. From May to September, 1905, he was Manager of the International Contract Co., Seattle, Wash., and in October of the same year he was appointed Engineer of Maintenance of Way of the Nebraska district of the Chicago, Burlington & Quincy. On January 1, 1906, he was made Assistant Principal Engineer of the Lines West, which position he held until his appointment on November 4 as Engineer of Maintenance of Way.

Purchasing Officer.

Henry E. Norton has been appointed Purchasing Agent of the St. Paul Union Stock Yards Co. and the Stock Yards Terminal Railway, succeeding C. E. Weber, resigned.

OBITUARY.

Thomas D. Connelly, General Agent of the Missouri Pacific at Los Angeles, Cal., died from a stroke of paralysis in Los Angeles on December 21.

Frank G. Beatty, Secretary and General Freight and Passenger Agent of the Nevada County Narrow Gauge Railroad, died on December 15. He was 68 years old.

Dr. Thomas Gray, Vice-President of Rose Polytechnic Institute, Terre Haute, Ind., and Professor of Dynamic and Electric Engineering, died December 19, aged 58 years.

W. J. Leake, General Counsel of the Washington Southern, and Director and General Counsel of the Richmond, Fredericksburg & Potomac, died at Richmond, Va., on November 23.

Garry Brown, Chief Accountant and Examiner of the Interstate Commerce Commission, died at his home in New York on December 21. He had been with the Interstate Commerce Commission for about two years.

E. L. Du Barry, Superintendent of Terminals of the Norfolk & Western at Norfolk, Va., died of apoplexy on December 4. He was 68 years old and began railway work in the Pennsylvania nearly 50 years ago. He has been in the service of the Norfolk & Western for the past 28 years.

Railroad Construction.

New Incorporations, Surveys, Etc.

ATCHISON, TOPEKA & SANTA FE.—An officer of the Arizona & California writes that no new construction work was done during 1908 on the projected extension of this road from the Colorado river west to Bengal, Cal., 92 miles. (Oct. 2, p. 1074.)

BIRMINGHAM, COLUMBUS & ST. ANDREWS.—An officer writes that work is under way on an extension of this road from Morrison, Fla., to Green Head, five miles. (R. R. G., March 13, p. 390.)

CANADIAN ROADS.—Application is being made to the British Columbia Legislature for an act to incorporate a company with power to construct a line from Hardy Bay, B. C., westerly to Quatsino Sound. H. Appleton, of Victoria, B. C., is acting for the applicants.

The Pacific Coast Coal Mines, Ltd., has made application to the British Columbia Legislature for power to construct railways in Cranberry and Cedar districts and in Prince Rupert district, Vancouver Island. The lines are to be built to carry the company's coal to a connecting point on the seashore, or to connect with existing railways. Barnard & Robertson are solicitors for the company.

CANADIAN ROADS (ELECTRIC).—Application is to be made to the Provincial government for permission to build electric lines from Ottawa, Ont., southeast to Morrisburg, 50 miles, thence southwest to Brockville, 33 miles, then to Darling, 60 miles. A branch is also to be built east from Morrisburg. C. S. Cossitt, of Brockville, is to be President, and F. Iveson, of Metcalf, Secretary of the company.

Plans are under way to form a company to build lines radiating from Woodstock, Ont., northeast through Plattsville and New Dundee to Guelph, 40 miles. Messrs. Baird and McKee, associated with other business men of Plattsville, and the Central Security Co., of Toronto, are said to be interested.

CANANEA, YAQUI RIVER & PACIFIC.—See Southern Pacific.

CAROLINA, CLINCHFIELD & OHIO.—An officer writes that work is now under way by the MacArthur Construction Co., of New York, on 70 miles at various points between Dante, Va., south through North Carolina to Spartanburg, S. C. Surveys are being made for an extension from the present northern terminus at Dante, Va., north to Elkhorn City, Ky., 45 miles. (Oct. 16, p. 1175.)

DURHAM & CHARLOTTE.—An officer writes that no work is now being done on the proposed extension of this road from Gulf, N. C., northeast to Pittsboro, 15 miles. Trains are now being operated over the new steel bridge being built over Deep river between Star and Gulf, to replace the wooden structure carried away by floods last August.

ENID, OCHILTREE & WESTERN.—An officer writes that terminal grounds have been secured, and location surveys and right of way are being secured, for this proposed line. The projected route is from Dalhart, Tex., east to Ochiltree, 100 miles, passing through Dallam, Moore, Hutchinson, Hansford and Ochiltree counties. (Sept. 18, p. 980.)

GRAND TRUNK PACIFIC.—Engineers of this company have, it is said, secured a grade north from North Vancouver, B. C., through the Seymour Creek valley to Pemberton Meadows. It is probable that this route will be used for the branch north to the main line at Fort George instead of by way of Howe Sound and the Squamish. (R. R. G., March 13, p. 396.)

HELENA, PARKIN & NORTHERN.—Newspapers report that a contract has been given, by this company, to D. S. Watrous, of Parkin, Ark., to build its proposed line. The company was recently incorporated to build a line from Whitmore, Ark., St. Francis county, north via Parkin to Marked Tree, Poinsett county, about 50 miles. The incorporators include: G. Casey, B. S. Watross and E. F. Cooley, of Lansing, Mich., and T. E. Hare, of Vandale, Ark. (Dec. 11, p. 1559.)

HURON & ONTARIO.—Application is to be made by this company to Parliament for an extension of time to commence work on the lines it has been authorized to build. The char-

ters already granted provide for building lines as follows: From Port Perry, Ontario county, Ont., west via Uxbridge to Kincardine, on Lake Huron, 150 miles; from Priceville, Grey county, Ont., north to Meaford, thence west via Owen Sound to Southampton, then southwest via Port Elgin and Tiverton to Kincardine, 95 miles; from Walkerton, Bruce county, south to Mildmay, thence west via Teeswater to Lucknow, then southwest to Goderich, 55 miles, with a connecting line from Lucknow northwest via Ripley to Kincardine, 20 miles. T. M. Sanders is Engineer, in charge of construction and equipment, and H. Middlemist, of Toronto, is Consulting Engineer.

MEXICAN PACIFIC COAST LINE.—See Southern Pacific.

MEXICAN ROADS (ELECTRIC).—Emanuel Gallardo Cuesta and associates are back of a project to build an electric line from Guadalajara, Mex., south to Chapala, about 50 miles. It is announced that the construction of the line is assured. Former Governor David R. Francis, of St. Louis, Mo., is also said to be interested.

ST. MARY'S & WESTERN ONTARIO.—This company was incorporated in 1905 to build a line from Woodstock, Ont., northwest to St. Mary's, thence to Exeter and then south and west to Sarnia. Surveys have been made covering the whole of the route, about 125 miles. The line has been constructed between Embro and St. Mary's, 18 miles, and is operated under lease by the Canadian Pacific. The Dominion government granted a subsidy at the rate of \$3,200 a mile at the last session for the line between Woodstock and Exeter, 45 miles, which includes the constructed line between Embro and St. Mary's. A subsidy contract has recently been entered into between the company and the government for the construction of the unfinished sections. The town of St. Mary's granted a bonus of \$40,000 to the company to aid the construction.

SOUTHERN PACIFIC.—An officer of the Mexican Pacific Coast, building a line from Navjoa Sonora south to Guadalajara Jalisco, 730 miles, writes that work is under way by the Grant Bros. Construction Co., of Los Angeles, Cal., on the section from Quila, Sinaloa, Mex., south to the Rio de Piaxtla river, 60 miles. The Mexican Engineering & Construction Co., of Mexico City, is doing the grading work on the southern end of the line from Orendain, Jalisco, north to Tiquila. (R. R. G., March 13, p. 396.)

An officer of the Cananea, Yaqui River & Pacific writes that work is now under way by the Grant Bros. Construction Co., of Los Angeles, Cal., on an extension from Aguascalientes, Sonora, to Nacimientito, 10 miles.

TOPEKA & NORTHWESTERN.—See Union Pacific.

UNION PACIFIC.—An officer writes that work is under way on the extension of the Topeka & Northwestern, from Onaga, Kan., northwest to Marysville, 32.44 miles. The Kilpatrick Bros. & Collins Co., of Beatrice, Neb., are the contractors. (R. R. G., March 13, p. 395.)

Railroad Financial News.

BOSTON & WORCESTER ELECTRIC CO.'S.—A semi-annual dividend of \$1 per share on preferred shares has been declared, payable January 1. This reduces the annual rate from \$4 to \$2 per share.

BOSTON ELEVATED.—The Railroad Commission of Massachusetts has authorized the issue of \$6,650,000 additional capital stock to be sold at \$110 per share, the proceeds to be used to pay for construction and equipment of the proposed Cambridge subway. There was previously \$13,300,000 stock outstanding of a total authorized issue of \$23,000,000.

CAROLINA, CLINCHFIELD & OHIO.—The capital stock has been increased to \$30,000,000, of which one-half is 6 per cent. preferred.

CHESAPEAKE & OHIO.—The directors have authorized \$30,000,000 general funding and improvement bonds. Bonds amounting to \$11,000,000, running for 20 years and bearing interest at 5 per cent., have been sold to Kuhn, Loeb & Co. and J. P. Morgan & Co., New York. Part of the proceeds of this sale is to be used to refund \$7,500,000 6 per cent. notes due July 1, 1909.

CHICAGO & WESTERN INDIANA.—This company has sold to William Salomon & Co., New York, \$12,271,000 consolidated mortgage 4 per cent. bonds, part of the proceeds of the sale to be used for retiring \$8,000,000 collateral trust 5 per cent. notes which mature February 1, 1910, but which are to be called for payment February 1, 1909.

CHICAGO, BURLINGTON & QUINCY.—Directors ratified on December 21 the purchase of a controlling interest in the common stock of the Colorado & Southern. Enough of the \$31,000,000 outstanding common stock has been bought to give control. Control of the Colorado & Southern was formerly held by Edwin Hawley and associates.

DELAWARE & HUDSON.—The New York Public Service Commission, Second district, has approved the issue of \$230,000 first and refunding 4 per cent. bonds to retire notes issued to buy Troy & New England securities, and has disapproved of an issue of bonds to refund notes, amounting to \$4,665,295, made in connection with the purchase of interests in the Hudson Valley Co. and the United Traction Co., and has also disapproved of the issue of bonds to reimburse the Delaware & Hudson for \$2,500,000 advances for the purchase of coal properties. (Aug. 14, p. 74, and July 17, p. 556.)

LEHIGH VALLEY.—P. A. B. Widener has been elected a director and a member of the Executive Committee, succeeding H. McK. Twombly, resigned.

PENNSYLVANIA.—See Philadelphia, Baltimore & Washington.

PHILADELPHIA, BALTIMORE & WASHINGTON.—The Pennsylvania has sold to Brown Brothers & Co. and E. B. Smith & Co., Philadelphia, Pa., \$5,000,000 Philadelphia, Baltimore & Washington 4 per cent. serial bonds of 1909, due \$500,000 annually January 1, 1915, to and including January 1, 1924.

SEABOARD AIR LINE.—The United States Circuit Court has authorized the receivers to issue \$4,250,000 series C 5 per cent. receivers certificates, to be dated January 1, and payable within three years.

VIRGINIA & SOUTHWESTERN.—Redmond & Co., New York, are offering the unsold portion of \$1,000,000 first consolidated mortgage 5 per cent. bonds of 1908-1958, of which there is \$4,570,000 outstanding.

Equipment and Supplies.

LOCOMOTIVE BUILDING.

The Wharton Steel Co. has ordered one locomotive from the Baldwin Locomotive Works.

The Porto Rico Railway has ordered one locomotive from the Baldwin Locomotive Works.

Pickands, Mather & Co. have ordered four locomotives from the Baldwin Locomotive Works.

The Adirondack & St. Lawrence has ordered one locomotive from the Baldwin Locomotive Works.

The Cuban-American Sugar Co. has ordered one locomotive from the Baldwin Locomotive Works.

The Eastern & Western Lumber Co. has ordered two locomotives from the Baldwin Locomotive Works.

The Roscoe, Snyder & Pacific, Roscoe, Tex., has ordered one locomotive from the Baldwin Locomotive Works.

The Mississippi Central has ordered two locomotives from the Schenectady Works of the American Locomotive Co.

The Cuba Eastern has ordered through J. G. White & Co., New York, one 105,000-lb. locomotive, with 92,000 lbs. on drivers, from the Hicks Locomotive & Car Works.

The Colorado, Texas & Mexico, W. J. Gates, Purchasing Agent, 517 Liggett building, St. Louis, Mo., reported in the *Railroad Age Gazette* of Nov. 27 as in the market for three locomotives, will definitely decide upon its complete equipment order soon after Jan. 1.

The Chicago, Rock Island & Pacific, reported in the *Railroad Age Gazette* of November 27 as soon to purchase 35

Pacific locomotives, has ordered 35 locomotives of this type from the American Locomotive Co. These will have cylinders 23 in. x 28 in., and a total weight of 217,000 lbs.

The Chicago, Cincinnati & Louisville, reported in the *Railroad Age Gazette* of November 20 as soon to be in the market for locomotives, has ordered five consolidation locomotives from the Baldwin Locomotive Works. These will have cylinders 22 in. x 20 in., and a total weight of 268,000 lbs.

The Wabash-Pittsburgh Terminal Co., which was reported in the *Railroad Age Gazette* of November 27 as being in the market for 12 consolidation locomotives, expects to place this order in the next few days. They will have cylinder dimensions of 22 in. x 32 in. and a total weight of 233,000 lbs.

The Carolina, Clinchfield & Ohio, previously reported in the market, has ordered a total of 20 locomotives from the Baldwin Locomotive Works. The apportionment is as follows: 15 simple consolidation; 4 simple 10-wheel locomotives, and one Mallet (2-6-6-2) articulated compound locomotive.

The Union Railroad has ordered six six-wheel switching locomotives having cylinder dimensions of 20 in. x 26 in. and a total weight of 149,000 lbs., from the American Locomotive Co., and four simple consolidation locomotives with cylinder dimensions of 24 in. x 32 in., having a total weight of 250,300 lbs., from the Baldwin Locomotive Works.

The Virginian Railway, reported in the *Railroad Age Gazette* of October 30 as being in the market for 15 Mallet compound freight locomotives and 3 switching locomotives, has placed an order with the Baldwin Locomotive Works for 12 simple Mikado (2-8-2) locomotives, and an order with the American Locomotive Co. for 4 compound Mallet (2-6-6-0) locomotives, 3 simple eight-wheel (0-8-0) switching locomotives and one simple consolidation locomotive.

CAR BUILDING.

The Bellingham Bay & British Columbia has ordered one steel gasoline motor car from the McKen Motor Car Co.

The Louisiana Central has ordered from the Beaumont Iron Works, Beaumont, Tex., 15 standard gage logging cars of 60,000 lbs. capacity.

The Salt Lake & Ogden (Electric), Salt Lake City, Utah, expects to be in the market soon for a number of electric cars and accessory equipment.

The Pittsburgh & Lake Erie has ordered 500 fifty-ton steel hopper cars from the Standard Steel Car Co. These are in addition to the 1,500 ordered from the American Car & Foundry Co.

The Cuba Eastern has ordered, through J. G. White & Co., New York, twenty 36-ft., 50,000-lb. flat cars, with bulkheads, for sugar cane transportation, from the Hicks Locomotive & Car Works.

The Delaware, Lackawanna & Western, reported in our issue of Dec. 4 as being in the market for 300 forty-ton steel hopper cars and 500 box cars, has ordered this equipment from the American Car & Foundry Co.

The Virginian Railway has ordered 12 steel underframe eight-wheel cabooses from the American Car & Foundry Co., and 8 coaches, 4 parlor cafe cars, 4 mail and baggage cars and 2 baggage cars from the Barney & Smith Car Co.

The Colorado, Texas & Mexico, W. J. Gates, Purchasing Agent, 517 Liggett building, St. Louis, Mo., reported in our issue of Nov. 27 as in the market for 10 box, 15 flat and 4 combination passenger cars, will definitely decide upon its complete equipment order soon after Jan. 1.

IRON AND STEEL.

The Isthmian Canal Commission has ordered 1,100 tons of rails from the Lackawanna Steel Co.

The St. Louis Merchants' Bridge Terminal has ordered 3,000 tons of rails from the United States Steel Corporation.

The Chicago, Rock Island & Pacific is in the market for

1,000 tons of structural steel for track elevation at Oak Park, Ill.

The Crane Co., Chicago, has asked prices on 2,700 tons of structural steel for a new plant at Oakmont, near Pittsburgh, Pa.

The Laramie, Hahn's Peak & Pacific has ordered from the Colorado Fuel & Iron Co. 60-lb. rails sufficient to lay 70 miles of track.

Denver, Colo.—The contract for the superstructure of the Twentieth street viaduct, including 3,900 tons of structural steel, has been given to the Milwaukee Bridge Co. (See *Denver, Colo.*, under *Railroad Structures*.)

The Chicago, Burlington & Quincy has ordered 40,000 tons of 90-lb. open hearth rails, 30,000 tons of which was placed with the United States Steel Corporation to be rolled at Gary, Ind., and 10,000 tons with the Colorado Fuel & Iron Co. These rails are to be made in accordance with the new Type "A" specifications of the American Railway Association.

RAILROAD STRUCTURES.

AMARILLO, TEX.—The Chicago, Rock Island & Gulf has given the contract to the Texas Building Co., Fort Worth, Tex., for the erection of a two-story passenger station. It will be of stone construction and will cost \$15,000. The plans were prepared by Lang & Witchell, Dallas, Tex. (Sept. 4, p. 883.)

BRANDON, MAN.—The Canadian Northern will, it is said, start work soon on its proposed new station and freight sheds. The sheds will cover a full block of 500 ft. and occupy the site of the present sheds. The cost of the improvements will be about \$45,000.

BUFFALO, N. Y.—Newspapers report that the railways interested in the Union passenger station at Buffalo, rather than comply with the city requirements, have abandoned the project.

CALIFORNIA STATIONS.—The Western Pacific, according to press despatches from San Francisco, has definitely decided upon the points along its road where stations will be built. It is stated that contracts will be placed within the next few days for all the passenger stations that will be built in California. The number along the entire route will be 43.

DALLAS, TEX.—The plans for the new union passenger station to provide passenger terminal facilities for all the roads entering Dallas, except the St. Louis Southwestern and the Texas & Pacific, are being completed. (Dec. 11, p. 1563.)

The Chicago, Rock Island & Gulf and the Trinity & Brazos Valley will build joint freight depots on the companies' property west of the St. Louis Southwestern passenger depot. There will be an inbound and an outbound depot. The cost will be approximately \$400,000.

DENVER, COLO.—The contract for building the Twentieth street viaduct has been given to the Milwaukee Bridge Co. It is to carry highway traffic across the tracks and yards of the Union Pacific, the Colorado & Southern, the Chicago, Burlington & Quincy, and the Denver, Northwestern & Pacific. The contract calls for 3,900 tons of structural steel. The work is to be completed in ten months and to cost \$300,000. Herbert S. Crocker, 434 Empire building, Denver, is the Consulting Engineer. (Oct. 16, p. 1168.)

RUSTON, LA.—An officer of the Chicago, Rock Island & Pacific writes, regarding newspaper reports that this company will build a combined freight and passenger station here, that nothing has yet been decided regarding the construction of such a building.

SANTA FE, N. MEX.—An officer of the Atchison, Topeka & Santa Fe writes that contract has been given for building a passenger station here. The difficulty of securing a location has delayed construction work.

TACOMA, WASH.—Bids will be asked by the Chicago, Milwaukee & St. Paul soon after Jan. 1 for the erection of large warehouses. A little later bids will be asked on docks and related buildings. The contract for the new freight sheds, bids for which were recently received, has not been awarded. (Nov. 27, p. 1460.)

TEMPLE, TEX.—The Gulf, Colorado & Santa Fe will spend approximately \$450,000 in rebuilding its terminals and increasing its facilities. The proposed work includes a new passenger station 40 ft. x 196 ft., two stories high, of brick construction and to cost \$75,000; new freight yards costing \$200,000, including 15½ miles of track to be laid with 65-lb. rail; a brick storehouse 50 ft. x 200 ft., with concrete basement for handling of oils, etc., costing \$28,500; additional main line double-track to cost \$30,000; new track scales 46 ft. long with a capacity of 100 tons, to cost \$7,750; yard office, 24 ft. x 80 ft., to cost \$3,500; air cleaning plant, water system and necessary appliances, to cost \$6,500; bridges and drainage, \$1,500; additional land to be purchased, estimated at \$75,000. It is also estimated that about \$15,000 will be spent in moving oil and water tanks and other changes. It is expected that active work will begin in about 30 days. (Dec. 4, p. 1507.)

Regulation of Car Lighting in Canada.

The Canadian Board of Railway Commissioners has made an order in regard to the lighting of passenger cars on Canadian railways requiring that henceforth all cars must be lighted by the Pintsch compressed oil gas system, or by acetylene gas under the absorbent or Commercial acetylene system, with exceptions as noted below. The order requires that the working pressure shall not exceed 150 lbs. to the square inch. The test pressure for the Pintsch system is 300 lbs., and for acetylene the test pressure is to be four times the working pressure. There are elaborate rules for inspection. Exceptions permit the use of electricity for lighting and the use of oil in cars having installed lamps for using mineral seal lamp oil. A penalty of \$100 is fixed for each violation of the order by railways and \$2 for violation by employees.

The Wyanacme Company.

The Wyanacme Company has been incorporated at Chicago to conduct the selling of the products of the Wyandot Refineries Company, Cleveland, Ohio, and the Acme Supply Company, Chicago, together with certain railway specialties heretofore sold by the president of the new company, Fred F. Bennett, formerly representative of the *Railroad Gazette* in the west, and subsequently identified with the Chicago Pneumatic Tool Company, the American Steel Castings Company (now the American Steel Foundries), the Acme Supply Company, etc.

The specialty of the Wyandot Refineries Company is a long-time burner oil made by a new and patented process owned by the Wyandot Refineries Company, by which in the first stage of treatment of crude oil, all mineral and vegetable impurities are removed by the first process.

The company owns 1,868 acres of producing oil lands in the proven oil district surrounding Carey, Ohio, Crawford, Ohio, etc. It has its refinery at the latter point, situated on the Hocking Valley Railroad.

The oil was first used for poultry purposes in incubators and brooders, ordinary kerosene having proven unreliable and deadly to the newly hatched chicks. It was found that with the Wyandot oil there was no necessity for touching the wick from the setting of the hatch until same was completed three weeks later.

The local representatives of the Hocking Valley, learning of this, conceived the idea that an oil that would accomplish these results would be suitable for long-time burning signals for which no suitable or reliable oil had up to the time been found. After exhaustive tests it was found that signal lamps required the attention of the signal men one day each week instead of every day as previously, and it was even found that the lamps were giving good service for a much longer period. From this small beginning the larger railway systems became interested and many of them have made exhaustive tests, as the result of which the oil is selling regularly in carload lots.

The headquarters of the Wyanacme Company will be at Cleveland, Ohio, and the company will also have offices at New York and Chicago.

Supply Trade News.

Chas. W. Tubby, St. Paul, Minn., dealer in railway supplies and machinery, has removed his office from room 510 to room 415, Pioneer Press building, St. Paul.

W. J. Gates, Purchasing Agent, Colorado, Texas & Mexico Railroad, 517 Liggett building, St. Louis, Mo., wants catalogues relative to devices and articles pertaining to the purchasing department of a railway.

F. H. Niles, President and General Manager of the Blue Island Car & Equipment Co., Chicago, and the Sheffield Car & Equipment Co., Kansas City, Mo., was married on December 16 to Miss Edith Willson, of Chicago.

Allen Gray, President of the Gray Tie & Timber Co., Evansville, Ind., has been elected President of the St. Louis Car Wheel Co., St. Louis, Mo., succeeding the late John W. Nute. J. J. Morse, Secretary-Treasurer, has been made also General Manager.

The Carborundum Company, Niagara Falls, N. Y., will open an office at 365 Frick annex, Pittsburgh, Pa., January 1. W. W. Sanderson has been appointed manager of the Pittsburgh district. He has been with the company many years and is generally known in the southern states as "Grindstone Bill."

Willis C. Squire, 209 Western Union building, Chicago, has been made agent of the Falls Hollow Staybolt Co., Cuyahoga Falls, Ohio, handling its products for the railway trade in Chicago territory. Alex. S. Mitchell, 45 Broadway, New York, has been made agent for the railway and boiler trade in New York territory.

The Strauss Self-Balancing Window Co., Chicago, has been incorporated to do a general manufacturing and merchandise business, with special attention to the making and sale of a self-balancing window device for passenger cars. The incorporators are Joseph B. Strauss, Jesse Lowenhaupt and Jacob W. Loeb. Capital stock, \$50,000.

The American Car & Equipment Co., Chicago, is making extensive improvements and additions to its plant at Chicago Heights. It has just completed a large new blacksmith and forge house and is now constructing a new mill building. This will give the company an increased capacity of at least 50 cars over its present output.

Gulick-Henderson & Co., Inspecting Engineers and Metallurgists, Pittsburgh, Pa., are contemplating opening offices in New York, Chicago and Philadelphia the early part of next year. The firm reports a large number of inquiries covering inspection work, and their testing and metallurgical work is not falling off as was expected during the opening of the holiday season.

L. J. Viersen, Secretary of the Kellogg Car & Equipment Co., Kankakee, Ill., has been elected President, succeeding Edwin M. Kellogg. H. Schwartzburg has been elected Treasurer, succeeding F. W. Kellogg, and E. H. Ward has been elected General Manager. The company has planned to increase the capacity of its plant by the installation of additional machinery and tracks, as it has considerable work booked which guarantees such improvements.

The Raymond Concrete Pile Co., New York and Chicago, has been given the contract for placing Raymond concrete piles in the foundations of the new postoffice which is being built at St. Louis, Mo. About 55,000 ft. of piling will be required in this work. Another contract calls for the placing of Raymond concrete piles in the foundations of a warehouse for E. D. Depew, wholesale grocers, New York. This will be a six-story structure but the foundations are designed to support three additional stories if necessary.

J. G. White & Company, New York, through their purchasing and inspection departments are especially equipped to purchase and inspect all sorts of railway equipment and supplies for foreign properties. Their experience in operation and construction of properties abroad fits them for this business and they are now paying particular attention to it. Their purchasing department is under the direct charge of E. N. Chilson, who has had many years experience in pur-

chasing for steam and traction properties, having been formerly connected with the Delaware, Lackawanna & Western and the Chicago, Rock Island & Pacific.

Anti-Pluvius skylights and sidelights have recently been ordered and are now nearing completion for the Bush type trainshed at Scranton, Pa., for the Delaware, Lackawanna & Western. This is the second order The G. Drouve Co., Bridgeport, Conn., has received for Anti-Pluvius skylights and sidelights from the Lackawanna for new passenger trainsheds, the other being at the Hoboken terminal. The 1908 edition of the Anti-Pluvius skylight catalogue recently received from the German manufacturers describes the new railway station at Hamburg on which Anti-Pluvius skylights were used. This station is one of the largest in the world. A few of the important installations of these skylights, recently made in Germany and Belgium, are: Municipal electric power station, Charlottenbourg, Berlin; railway station, Lübeck, Belgium; locomotive works, Darmstadt, Germany; industrial plant of the G. Schiele Company, Frankfurt-on-Main, etc. In the United States, recent installations include the Lackawanna station at Scranton, Pa.; American & British Mfg. Co.; N. Y. C. & H. R.; Chicago City Railway; New York City Ry.; Purdue University; C. R. R. of N. J. ferry terminal, etc. This type of puttyless skylight meets the demand for an easily accessible construction. It permits of repainting of the steel supporting bars and cleaning of the inside glass surface without much trouble and with ordinary labor. It can be sent anywhere and is easily erected with the aid of a screw-driver and a wrench. The Drouve continuous clip (protected by patent) is an improvement in skylight construction which secures a tight and proper fit of skylight to the curb.

TRADE PUBLICATIONS.

Pneumatic Tools.—The Independent Pneumatic Tool Co., Chicago, has just issued a two-page folder illustrating and describing the various pneumatic tools which it manufactures, including air drills, riveting hammers, chipping and calking hammers, etc.

Folding Doors.—Catalogue No. 2 just issued by the Ritter Folding Door Co., Cincinnati, Ohio, contains several half-tone illustrations showing their folding doors installed in depots, roundhouses, machine shops, etc. These doors are made of wood, wood and glass, or of steel.

Car Heating.—The Parker Car Heating Co., Ltd., Detroit, Mich., has just issued catalogue No. 3, which contains information regarding the Parker anti-freezing and hot water system of railway car heating by steam from the locomotive. Three double-page line-drawn plates show the application of the Parker system to railway passenger train cars.

Milburn Light.—The Alexander Milburn Co., Baltimore, Md., has just issued a catalogue which describes in detail the Milburn light. The apparatus mainly comprises three parts: an outer tank holding water, and an inner receptacle holding the chemical, and a burner sand pipe. It is said to be 15 times more powerful than coal gas. This light is for use especially in night operations in railway shops and construction work.

Testing and Assembling Bettendorf Truck Frames.

The method of testing Bettendorf one-piece cast-steel truck side frames is illustrated in the accompanying views. A 975-ton hydraulic press is used. The first operation is straightening the spring seat, after which the frame is suspended on the spring seat as in Fig. 1, ready for the false journals to be slid into the journal boxes. The frame is then squared and tested as shown in Fig. 2. The wedge bearing of the journal box must be in line with the spring seat. This is tested by gages after the load has been taken off and the false journals withdrawn. The maximum load applied to the frame by the press is equal to the capacity of the car under which the frame is to be used, a 40-ton-car frame, for example, being given a load of 40 tons.

The frame is next straightened transversely to bring the lugs for the brasses, on the insides of the journal boxes, and the column guide faces in proper relation to each other. The transverse straightness is likewise tested by gages.

From the testing machine the frames are removed by a 3-ton traveling crane to the finishing and inspecting department. An inspector gages the wheel base and tests the frame for squareness. In

this department pneumatic tools are used to chip to gage the column guides and dust-guard openings and to face the journal box openings for a good fit between box and cover. After finishing, the frames are painted and then taken by the traveling crane to the assembling department.

In assembling, all parts of the truck—side frames, bolsters, brake beams, etc.—are placed near the assemblers, and handled by a 1,000-lb. traveling holst. A pair of mounted wheels is run up on an ele-

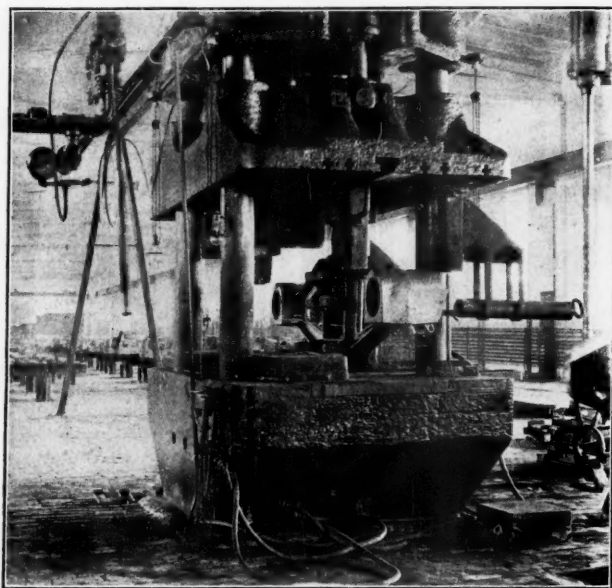


Fig. 1.

vated track and one side frame put in position. The wedges and brasses are then inserted in the journal boxes and the truck bolster set in position, after which the second side frame, and the brasses and wedges, are added. The bolster is then raised against the top arch-bar and the spring plank and springs slipped into position. With the addition of the brake beam and brake rigging, the truck is assembled and ready for a car. It requires about 8 min. to assemble

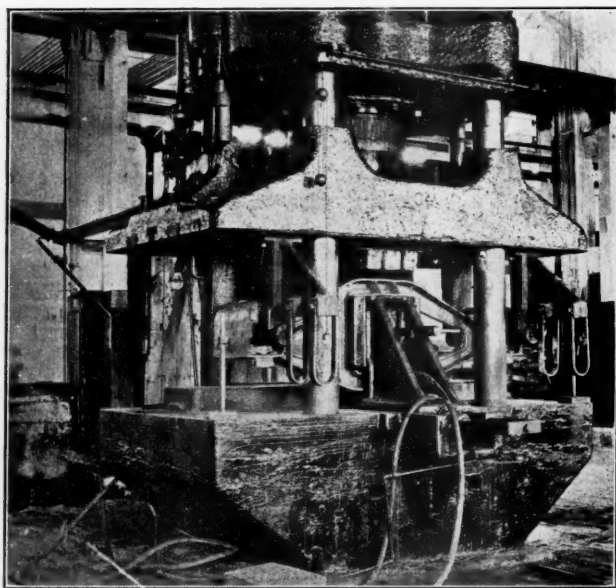


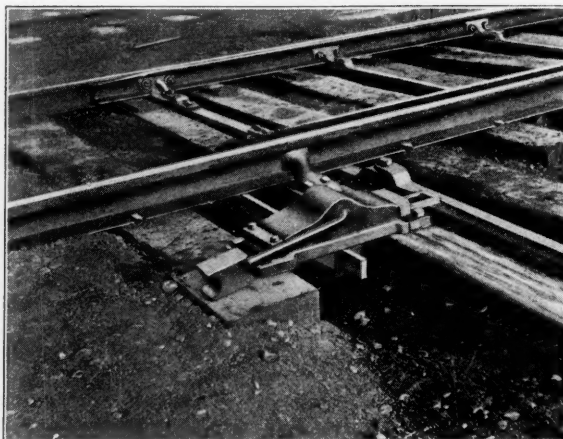
Fig. 2.

a truck and 9 min. to dismantle it after it has been placed under a car. The plant of the Bettendorf Axle Co. is at Davenport, Iowa.

Latimer Switch-Point Lock.

The Latimer switch-point lock, which was invented by J. B. Latimer, Signal Engineer of the Chicago, Burlington & Quincy, was devised to afford protection from the dangers of facing point switches and thereby prevent accidents caused by slipping switches, worn parts of stands, demolishing of switch stands, etc. The use of these locks has met with success for reasons which are stated as follows:

1. It is impossible to lock the switch unless the points are perfectly closed. There can be no half-way locking.
2. The lock being independent of the stand insures against all accidents to switch stands, and even though the stand be demolished the switch is still locked and safe.
3. It is very little higher than the rail and is therefore practically indestructible.
4. It cannot be left unlocked without the handle projecting up-



Latimer Switch-Point Lock.

wards, thus indicating danger and calling the attention of employees to the fact.

These locks are equipped with a circuit breaker for automatic signal territory, enabling the position of the switch to be indicated by the block signals. The switch is locked in either position, whether for main or side track movement. The Latimer lock is made by W. K. Kenly Company, Chicago.

All-Steel Trap Door.

The accompanying illustrations show an all-steel trap door and lifting device for platforms of passenger coaches, recently placed on the market by the O. M. Edwards Company, Syracuse, N. Y. This door has been designed especially to meet the requirements for a prac-



Edwards All-Steel Trap Door.

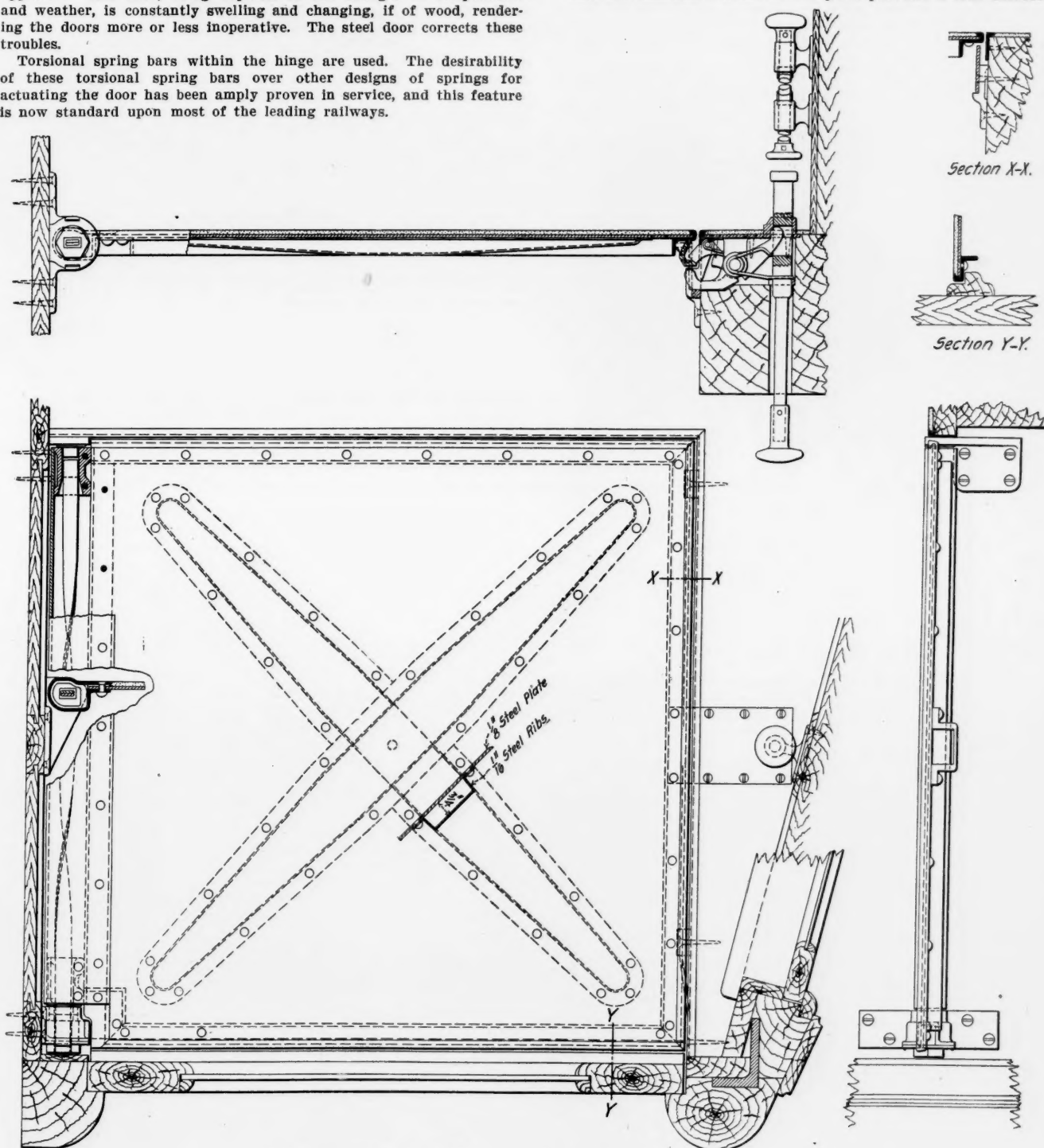
tical high grade device, at a moderate cost, for cars of both wood and steel construction.

Cheapness of application and maintenance of this door are special features. The door is furnished assembled complete, with hinge, bindings, truss ribs, etc., all that is necessary to attach to the car is to screw the two-hinge brackets to the car body, apply the two of this door is less in the matter of work than any other, and a great saving over the fitting, applying hinges and bindings necessary with the wood door. The advantages over the wood door are very apparent. The door, being exposed to the changes of temperature and weather, is constantly swelling and changing, if of wood, rendering the doors more or less inoperative. The steel door corrects these troubles.

Torsional spring bars within the hinge are used. The desirability of these torsional spring bars over other designs of springs for actuating the door has been amply proven in service, and this feature is now standard upon most of the leading railways.

supports the plate at the edge where it is attached to the car. 2d. The truss ribs riveted beneath the door, which are provided instead of depressing the plate, give strength and stiffness, as these ribs actually truss the plate. 3d. The stiffness and strength is also materially increased by the form of binding used at the three edges. A deep angle is riveted to the edges at a point where needed, and provides the edging or binding to receive the rubber floor covering. This design of door stiffened in the manner mentioned, and supported by the hinge, prevents any tendency for the door to dish or bend downward at the center, and will positively retain its shape.

The flat unbroken surface of the plate provides a true surface for



Edwards Metal Trap Door, as Applied to Wood Platform.

This design of spring action is perfect in its working, noiseless in operation, is easily and perfectly adjusted according to the results preferred, either to open the door automatically, or partially open to a point where the remaining movement can be operated by hand. The use of the torsional spring also does away with any exposed spring mechanism for operating the door, does not require oiling, and there is no possibility of soiling the clothes of passengers.

The stiffness, strength and rigidity of this door causes it to retain its shape when placed in service. This is due to the following reasons: 1st. The design of hinge used materially strengthens and

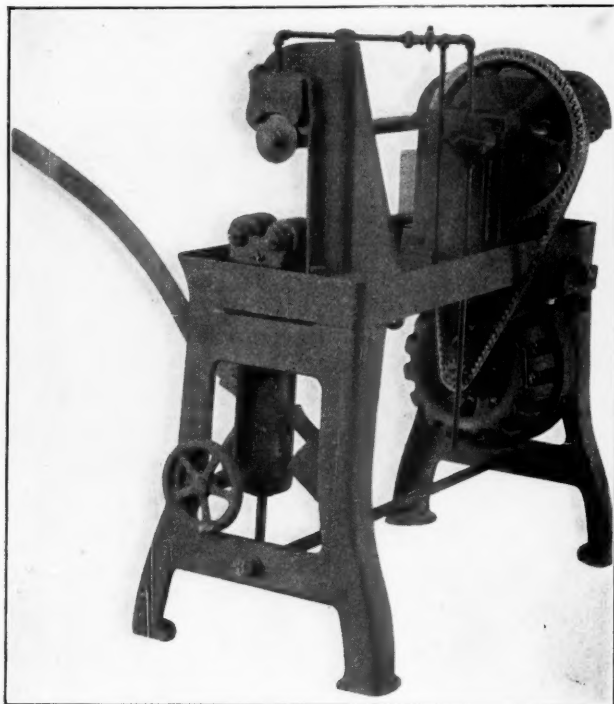
the attachment of rubber tiling or matting, without filling any depressions with wood or other material.

The locks used in connection with this door are designed with pivoted bolts, permitting the door to be closed easily with the least punishment on the bolt, and renders the lock more positive in its action. The price of this steel door complete, assembled, is actually less than the cost of the necessary fixtures to equip a wood door. Its use is therefore an economy upon wood cars as well as steel—to say nothing in regard to the greater efficiency and lesser cost and annoyance in maintenance.

Motor Driven Pipe or Tube Cutter.

Machines for cutting off pipe or boiler flues are often placed in a pipe shed or any location where power from a line shaft is not available so that a motor drive becomes especially advantageous. The motor-driven pipe-cutting machine shown herewith is of special interest for this line of work.

The machine is the No. 6 Fox pipe or tube cutter equipped with a 3 h.-p. Westinghouse motor, type C.C.L., alternating current, for 140-volt circuit, 60 cycle, 3 phase. The machine with motor drive is compact in arrangement, and the motor is mounted with almost no change from the standard machine, except that the bed is provided with two pads for bolting the motor on and in place of the regular



Fox Tube and Pipe Cutter.

tight and loose pulleys is placed a large sprocket for the Morse silent chain drive. Two of these machines were recently furnished to a large railway system for its locomotive boiler shop for cutting off boiler flues, safe ends, etc. The machine will cut off a 4-in. boiler flue in about eight seconds.

Power from the motor is transmitted through the Morse silent chain and a series of gears to the cutter shaft. The flue to be cut rests on the two rollers under the cutting disc and the hand wheel shown below adjusts the position of the rollers for different size pipe or flues. The cut is accomplished by depressing the lever which raises the rollers, bringing the flue against the cutter disc and severing it quickly. In fact, 1½-in. standard wrought iron pipe can be cut in about three seconds in this manner. It will be noticed that the machine is regularly equipped with an oil pump and tank for supplying the lubricant to the cutting disc.

These machines are manufactured by the Fox Machine Co., Grand Rapids, Mich.

Jessop High Speed Tool Steel.

The steel shaving shown herewith was cut from the tread of a steel car wheel. The shaving measured 24¾ in. in length and is a good illustration of the work done by the lathe tool made of Jessop's high speed tool steel, especially since this same tool was used continuously in truing 23 old car wheels with one grinding. This tool steel is made, it is said, of the best brands of Swedish iron, probably the best raw material obtainable for making machine tools. The relatively high first cost of tools made of Jessop's high speed steel is due, first to the above fact, and also since the transformation of the iron into tool steel is an expensive operation. Notwithstanding this high first cost, these machine tools yield higher efficiency than cheaper ones, the increase being due to the fact that less grinding is required. The time lost in the machine being idle and the mechanic's spending time at the grinding wheel rather than the machine is a considerable item and must be accounted as due to the tool steel.

The manufacturer of tool steel has within the past few years been compelled to meet the demands for tools having a cutting edge that will withstand usage at high rates of speed. It is claimed that Jessop's high speed steel will permit usage at several times the usual speed of machine tools and with no more regrinding than is

necessary with high grade carbon steel. This performance is possible on account of the particular ingredients of which Jessop steel is made, rather than from any special treatment by the tool maker. Machine tools of this steel should be ground on a wet emery wheel, using an abundance of water, since a dry wheel heats the cutting edge of the tool to an annealing point. No fixed rule will apply in hardening and tempering this tool and die steel, the process being



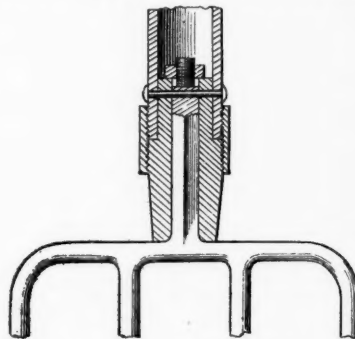
Shaving Cut With Jessop High Speed Steel.

essentially a matter of skill. To harden the steel, the heat must be extracted as soon as possible. The forged tool is placed in clean water until chilled, when the steel turns black. It is then plunged into oil, where it remains until cold. Thin pieces, as in small tools, should be removed from the oil when still hot and the strain removed by slightly heating, after which they should be excluded from the air until cold. Wm. Jessop & Son, Ltd., makers of this steel, claim absolute uniformity as one of its chief characteristics. The railway business of this firm is handled at 91 John street, New York.

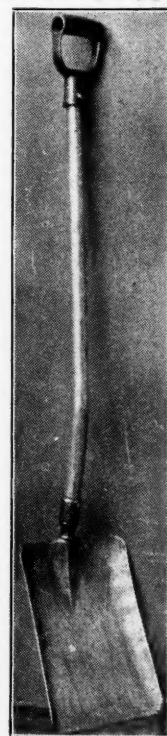
Tubular Handle Shovels.

The tubular tool handle and coupling here shown were devised by a railway track man because of the trouble he had from breakage of wooden handles. His first handle was made from gas pipe, and the coupling is the result of efforts to produce a fastening for it that would not pull loose. The scheme was patented and tools are now being put on the market.

The handles of these tools are made from light steel tubing, stiff enough not to break or bend in service. The shank of the tool is square next to the shoulder to prevent its turning in the handle. A casting threaded on its upper end is put over the square shank and fastened by a nut. The handle is secured to this casting by an ordinary pipe coupling. Should the tool be broken or worn out it may be removed readily from the handle and replaced by a new one at about half the cost of a wooden handle tool of the same character. The tools are made by the Tubular Handle and Tool Co., Salina,



Detail of Coupling.



Tubular Handle Shovel.

Kan. They include forks, spades, etc., in addition to the various kinds of shovels.

